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Satellite Situation Report

VOLUME 17 NUMBER 5

OCTOBER 31, 1977

Goddard Space Flight Center
Greenbelt, Maryland



OFFICE OF PUBLIC AFFAIRS
~~GODDARD SPACE FLIGHT CENTER~~
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

VOLUME 17 NO. 5

OCTOBER 31, 1977

SATELLITE SITUATION REPORT

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SPACE OBJECTS BOX SCORE

	OBJECTS IN ORBIT	DECAYED OBJECTS
AUSTRALIA	1	1
CANADA	8	0
ESA	3	0
ESRO	1	9
FRANCE	54	26
FRANCE/FRG	2	0
FRG	9	3
INDIA	1	0
INDONESIA	2	0
INTERNATIONAL TELECOMM- MUNICATIONS SATELLITE ORGANIZATION (ITSO)	22	0
ITALY	1	4
JAPAN	26	0
NATO	4	0
NETHERLANDS	0	4
PRC	6	14
SPAIN	1	0
UK	11	4
US	2916	1508
USSR	1441	4397
TOTAL	4509	5970

OBJECTS IN ORBIT										
INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLT- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1958 LAUNCHES										
BETA 1		16	US	17 MAR	138.2	34.2	4305	649		
BETA 2	VANGUARD 1	5	US	17 MAR	133.8	34.2	3919	653		
BETA 3		1576	US	17 MAR	131.3	34.2	3723	638		
1959 LAUNCHES										
ALPHA 1	VANGUARD 2	11	US	17 FEB	124.8	32.8	3230	557		
ALPHA 2		12	US	17 FEB	129.0	32.9	3606	555		
ALPHA 3		5807	US	17 FEB	126.9	32.8	3408	568		
ETA 1	VANGUARD 3	20	US	18 SEP	129.0	33.3	3642	512		
IOTA 1	EXPLORER 7	22	US	13 OCT	100.6	50.3	1031	548		
IOTA 2		23	US	13 OCT	99.7	50.3	955	530		
MU 1	LUNIK 1	112	USSR	2 JAN	HELIOCENTRIC ORBIT					
NU 1	PIONEER 4	113	US	3 MAR	HELIOCENTRIC ORBIT					
1960 LAUNCHES										
ALPHA 1	PIONEER 5	27	US	11 MAR	HELIOCENTRIC ORBIT					
BETA 1		28	US	1 APR	98.6	48.3	713	672		
BETA 2	TIRDS 1	29	US	1 APR	99.0	48.3	736	687		
BETA 3		101	US	1 APR	97.1	48.5	651	587		
BETA 4		115	US	1 APR	99.6	48.1	792	689		
GAMMA 4		99	US	13 APR	94.2	51.2	543	422		
ETA 1	TRANSIT 2A	45	US	22 JUN	101.4	66.6	1040	616		
ETA 2	GREX	46	US	22 JUN	101.3	66.6	1030	613		
ETA 3		47	US	22 JUN	101.1	66.6	1016	615		
ETA 4		840	US	22 JUN	100.9	66.6	1004	608		
ETA 5		841	US	22 JUN	100.9	66.6	1001	607		
IOTA 2		50	US	12 AUG	118.0	47.2	1684	1501		
IOTA 3		51	US	12 AUG	118.2	47.2	1687	1515		
IOTA 4		52	US	12 AUG	CURRENT ELEMENTS NOT MAINTAINED					
IOTA 5		53	US	12 AUG	118.4	47.2	1689	1530		
NU 1	COURIER 1B	58	US	4 OCT	107.0	28.3	1210	962		
NU 2		59	US	4 OCT	106.5	28.2	1206	922		
XI 1	EXPLORER 8	60	US	3 NOV	110.0	49.9	2039	414		
XI 2		62	US	3 NOV	106.7	49.9	1745	408		
PI 1	TIRDS 2	63	US	23 NOV	97.9	48.5	710	609		
PI 2		64	US	23 NOV	97.0	48.5	658	578		
PI 3		74	US	23 NOV	97.5	48.5	681	598		
PI 4		75	US	23 NOV	97.7	48.5	695	602		
PI 5		5922	US	23 NOV	105.3	47.0	1038	976		
1961 LAUNCHES										
GAMMA 1	VENUS PROBE	80	USSR	12 FEB	HELIOCENTRIC ORBIT					
DELTA 2		82	US	16 FEB	118.3	38.8	2577	636		
DELTA 3		85	US	16 FEB	116.7	38.8	2443	625		
DELTA 5		3738	US	16 FEB	116.4	38.8	2427	613		
DELTA 6		3927	US	16 FEB	116.4	38.8	2416	626		
DELTA 7		4026	US	16 FEB	115.7	38.8	2392	584		
NU 1	EXPLORER 11	107	US	27 APR	107.1	28.7	1701	483		
NU 2		3739	US	27 APR	104.7	28.8	1484	474		
OMICRON 1	TRANSIT 4A	116	US	29 JUN	100.7	66.8	991	882		
OMICRON 2	INJUN-SR-3	117	US	29 JUN	103.7	66.8	993	884		
OMICRON 3	256		US	29 JUN	SEE NOTE 1*					
RHO 1	TIRDS 3	162	US	12 JUL	100.3	47.9	809	736		1*
RHO 2		165	US	12 JUL	100.0	47.9	793	724		
RHO 3		166	US	12 JUL	98.3	47.9	758	598		
RHO 4		167	US	12 JUL	101.8	47.8	926	769		
SIGMA 1	MIDAS 3	163	US	12 JUL	161.4	91.1	3543	3347		
SIGMA 3		188	US	12 JUL	161.1	91.1	3534	3328		
SIGMA 4		196	US	12 JUL	161.8	91.1	3579	3344		
A DELTA 1	MIDAS 4	192	US	21 OCT	165.9	95.8	3758	3494		
A DELTA 3		194	US	21 OCT	165.5	95.8	3779	3441		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1961 LAUNCHES (CONT'D)										
A DELTA 4		195	US	21 OCT	166.3	95.8	3843	3442		
A DELTA 5		2009	US	21 OCT	165.7	95.8	3734	3498		
A DELTA 6		2371	US	21 OCT	165.5	95.8	4359	2861		
A ETA 1	TRANSIT 4B	202	US	15 NOV	105.7	32.4	1104	951		
A ETA 2	TRAAC	206	US	15 NOV	105.7	32.4	1106	952		
A ETA 3		204	US	15 NOV	105.6	32.4	1096	946		
1962 LAUNCHES										
ALPHA 1	RANGER 3	221	US	26 JAN	HELIOCENTRIC ORBIT					
ALPHA 2		222	US	26 JAN	HELIOCENTRIC ORBIT					
BETA 1	TIROS 4	226	US	8 FEB	100.2	48.2	836	705		
BETA 2		227	US	8 FEB	101.2	48.1	932	697		
BETA 3		228	US	8 FEB	99.2	48.4	748	693		
BETA 4		229	US	8 FEB	99.9	48.3	814	694		
ZETA 1	OSO 1	255	US	7 MAR	95.0	32.8	534	507		
KAPPA 1		271	US	9 APR	152.9	86.6	3410	2785		
KAPPA 3		273	US	9 APR	152.6	86.6	3389	2774		
KAPPA 4		274	US	9 APR	153.3	86.6	3432	2792		
MU 2		282	US	23 APR	HELIOCENTRIC ORBIT					
A ALPHA 1	TIROS 5	309	US	19 JUN	100.2	58.0	948	594		
A ALPHA 2		311	US	19 JUN	99.6	58.0	899	580		
A ALPHA 3		312	US	19 JUN	101.4	58.2	1048	602		
A ALPHA 4		313	US	19 JUN	98.4	57.9	807	566		
A EPSILON 1	TELSTAR 1	340	US	10 JUL	157.7	44.7	5637	949		
A EPSILON 2		341	US	10 JUL	157.6	44.7	5624	948		
A OMICRON 1		369	US	23 AUG	99.3	98.3	840	613		
A OMICRON 2		370	US	23 AUG	96.5	98.5	637	550		
A OMICRON 3		378	US	23 AUG	100.1	98.4	924	610		
A OMICRON 4		388	US	23 AUG	99.0	98.5	821	607		
A RHO 1	MARINER 2	374	US	27 AUG	HELIOCENTRIC ORBIT					
A RHO 2		375	US	27 AUG	HELIOCENTRIC ORBIT					
A PSI 1	TIROS 6	397	US	18 SEP	98.5	58.3	701	677		
A PSI 2		398	US	18 SEP	97.8	58.3	661	655		
A PSI 3		399	US	18 SEP	99.0	58.4	748	682		
A PSI 4		400	US	18 SEP	97.4	58.1	652	617		
B ALPHA 1	ALOUETTE 1	424	CANADA	29 SEP	105.4	80.4	1031	998		
B ALPHA 2		426	US	29 SEP	105.3	80.4	1026	1001		
B ALPHA 3		510	US	29 SEP	105.3	80.5	1021	999		
B ALPHA 4		511	US	29 SEP	105.4	80.4	1038	993		
B GAMMA 1	EXPLORER 14	432	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B GAMMA 2		NNA	US	2 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B ETA 1	RANGER 5	439	US	18 OCT	HELIOCENTRIC ORBIT					
B ETA 2		440	US	18 OCT	HELIOCENTRIC ORBIT					
B LAMBDA 1	EXPLORER 15	445	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B LAMBDA 2		NNA	US	27 OCT	CURRENT ELEMENTS NOT MAINTAINED					
B MU 1	ANNA 1B	446	US	31 OCT	107.8	50.1	1182	1075		
B MU 2		447	US	31 OCT	107.6	50.1	1165	1066		
B MU 3		450	USSR	1 NOV	HELIOCENTRIC ORBIT					
B UPSILON 1	RELAY 1	503	US	13 DEC	185.0	47.5	7441	1315		
B UPSILON 2		515	US	13 DEC	184.8	47.5	7424	1315		
B CHI 1	EXPLORER 16	506	US	16 DEC	104.3	52.0	1174	748		
B PSI 1	TRANSIT 5A	509	US	19 DEC	98.3	90.6	596	667		
B PSI 3		519	US	19 DEC	98.4	90.6	701	669		
B PSI 4		523	US	19 DEC	98.7	90.4	747	651		
1963 LAUNCHES										
1963 004A	SYNCOM 1	553	US	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1963 004B		532	US	14 FEB	309.4	32.6	17314	238		
1963 006A		534	US	19 FEB	96.6	100.4	717	485		
1963 005B		533	US	19 FEB	95.4	100.4	622	460		
1963 005D		536	US	19 FEB	93.6	100.4	494	418		
1963 005B		566	USSR	2 APR	BARYCENTRIC ORBIT					

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1963 LAUNCHES (CONT'D)										
1963 013A	TELSTAR 2	573	US	7 MAY	225.2	42.7	10802	969		
1963 013B		575	US	7 MAY	225.0	42.7	10787	965		
1963 014A		574	US	9 MAY	166.4	87.3	3676	3614		
1963 014B		579	US	9 MAY	166.2	87.4	4075	3201		
1963 014C		608	US	9 MAY	166.4	87.3	3729	3561		
1963 014D	- 014DE		US	9 MAY	SEE NOTE	2*				2*
1963 022A		594	US	16 JUN	99.1	89.9	730	707		
1963 022B		603	US	16 JUN	99.2	89.9	738	713		
1963 022C		610	US	16 JUN	100.5	90.1	851	724		
1963 024A	TIROS 7	604	US	19 JUN	97.0	58.2	630	602		
1963 024B		605	US	19 JUN	94.5	58.1	501	492		
1963 024C		606	US	19 JUN	97.2	58.3	639	612		
1963 024D		607	US	19 JUN	95.2	58.0	554	510		
1963 025B		614	US	27 JUN	127.0	82.1	3650	339		
1963 026A	RESEARCH SATELLITE FOR GEOPHYSICS	612	US	28 JUN	99.4	49.7	1059	405		
1963 030A		622	US	18 JUL	167.8	88.3	3724	3680		
1963 030B		635	US	18 JUL	167.8	88.3	3723	3681		
1963 030C		630	US	18 JUL	167.4	88.3	3794	3580		
1963 030E		631	US	18 JUL	168.2	88.3	3775	3663		
1963 030F		3121	US	18 JUL	166.6	87.3	3720	3687		
1963 030G		3132	US	18 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031A	SYNCOM 2	634	US	26 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1963 031H		625	US	26 JUL	170.9	32.6	7357	292		
1963 031A		669	US	28 SEP	107.0	89.8	1113	1072		
1963 031B		670	US	28 SEP	107.3	89.8	1137	1070		
1963 031C	SN 39	671	US	28 SEP	107.2	89.8	1135	1070		
1963 031D		672	US	28 SEP	107.0	89.8	1117	1064		
1963 031E		745	US	28 SEP	106.9	89.8	1104	1069		
1963 031F		2097	US	28 SEP	107.0	89.8	1123	1060		
1963 031G		3166	US	28 SEP	107.3	89.8	1136	1070		
1963 031H		7259	US	28 SEP	106.7	89.8	1104	1048		
1963 031A		674	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 031B		675	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 031C		692	US	17 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1963 043A	POLYOT 1	683	USSR	1 NOV	98.5	58.8	1053	324		
1963 047A	CENTAUR 2	694	US	27 NOV	106.9	30.3	1697	472		
1963 047B	- 047P		US	27 NOV	SEE NOTE	3*				3*
1963 049A		703	US	5 DEC	106.7	89.8	1092	1065		
1963 049B		704	US	5 DEC	107.0	89.8	1118	1068		
1963 049C		705	US	5 DEC	107.0	89.8	1116	1067		
1963 049D		706	US	5 DEC	106.9	89.8	1108	1062		
1963 049E		715	US	5 DEC	106.7	89.8	1103	1054		
1963 049F		753	US	5 DEC	106.9	89.8	1113	1064		
1963 049G		2432	US	5 DEC	107.0	89.8	1117	1067		
1963 049H		2620	US	5 DEC	106.6	89.8	1087	1060		
1963 049J		2930	US	5 DEC	103.6	89.8	1025	841		
1963 049K		4526	US	5 DEC	103.2	89.7	1051	780		
1963 049L		6182	US	5 DEC	103.3	89.7	1061	779		
1963 049M		6283	US	5 DEC	103.4	89.7	1056	789		
1963 053A	EXPLORER 19	714	US	19 DEC	110.6	78.9	1633	881		
1963 053B		721	US	19 DEC	115.6	78.6	2368	604		
1963 053C		722	US	19 DEC	114.6	78.7	2164	714		
1963 053D		723	US	19 DEC	114.4	78.7	2146	714		
1963 053E		724	US	19 DEC	114.4	78.7	2179	684		
1963 053G		726	US	19 DEC	113.7	78.6	2143	660		
1963 053H		732	US	19 DEC	114.3	78.7	2167	690		
1963 053J		3750	US	19 DEC	114.1	78.7	2160	675		
1963 054A	TIROS 8	716	US	21 DEC	99.2	58.4	738	703		
1963 054B		717	US	21 DEC	98.7	58.4	717	681		
1963 054C		720	US	21 DEC	100.8	58.4	912	688		
1963 054D		736	US	21 DEC	96.6	58.5	651	549		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1964 LAUNCHES										
1964 001A		727	US	11 JAN	103.4	69.9	930	911		
1964 001B	GRAVITY GRADIENT 1	728	US	11 JAN	103.3	69.9	929	910		
1964 001C	EGRS 1	729	US	11 JAN	103.4	69.8	930	910		
1964 001D	SOLAR RAD.	730	US	11 JAN	103.4	69.9	930	911		
1964 001E		731	US	11 JAN	103.4	69.9	931	910		
1964 002A		733	US	19 JAN	101.1	99.0	843	788		
1964 002B		734	US	19 JAN	101.1	99.0	828	805		
1964 002C		735	US	19 JAN	101.2	99.0	832	805		
1964 003A	RELAY 2	737	US	21 JAN	194.7	46.3	7472	2026		
1964 003B		738	US	21 JAN	194.7	46.3	7480	2024		
1964 004B		741	US	25 JAN	108.8	81.4	1308	1044		
1964 004C		742	US	25 JAN	108.7	81.4	1305	1038		
1964 004D		743	US	25 JAN	108.7	81.5	1306	1077		
1964 006A	ELEKTRON 1	746	USSR	30 JAN	167.4	60.8	6964	405		
1964 006B	ELEKTRON 2	748	USSR	30 JAN	1356.3	65.2	65985	2436		
1964 006C		750	USSR	30 JAN	160.1	60.8	6371	412		
1964 006D		751	USSR	30 JAN	1384.0	64.4	67386	2137		
1964 016D	ZOND 1	785	USSR	2 APR	HELIOCENTRIC ORBIT					
1964 026A		801	US	4 JUN	102.8	90.5	939	854		
1964 026B		805	US	4 JUN	103.4	90.1	959	880		
1964 026C		806	US	4 JUN	101.8	90.8	919	773		
1964 026D		809	US	4 JUN	102.9	90.5	944	857		
1964 026E		2986	US	4 JUN	102.9	90.5	942	857		
1964 031A		812	US	18 JUN	101.5	99.7	836	826		
1964 031B		813	US	18 JUN	101.5	99.7	837	827		
1964 031C		815	US	18 JUN	101.4	99.7	839	819		
1964 038A	ELEKTRON 3	829	USSR	10 JUL	166.1	60.8	6863	400		
1964 038B	ELEKTRON 4	830	USSR	10 JUL	1313.4	69.5	63345	3354		
1964 038C		831	USSR	10 JUL	159.5	60.8	6331	404		
1964 038D		832	USSR	10 JUL	1319.0	69.3	63766	3158		
1964 040A		836	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040B		837	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 040C		838	US	17 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1964 041B		843	US	28 JUL	BARYCENTRIC ORBIT					
1964 045B		851	US	14 AUG	100.2	95.6	1294	247		
1964 047A	SYNCOM 3	858	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1964 047B		862	US	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1964 049D	COSMOS 41	869	USSR	22 AUG	714.5	71.5	37624	2572		
1964 049E		898	USSR	22 AUG	715.6	71.5	37841	2555		
1964 051A	EXPLORER 20	870	US	25 AUG	103.8	79.8	1018	866		
1964 051B		871	US	25 AUG	103.7	79.8	1007	863		
1964 053A	COSMOS 44	876	USSR	28 AUG	99.3	65.0	851	603		
1964 053B		877	USSR	28 AUG	99.4	65.0	790	678		
1964 054A	DGO 1	879	US	5 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1964 063A		893	US	6 OCT	106.2	89.8	1074	1037		
1964 063B		897	US	6 OCT	106.5	89.8	1080	1057		
1964 063C		900	US	6 OCT	106.3	89.8	1068	1046		
1964 063D		901	US	6 OCT	106.5	89.7	1080	1058		
1964 063E		902	US	6 OCT	106.5	89.7	1080	1058		
1964 063F		903	US	6 OCT	106.3	89.8	1066	1050		
1964 064A	EXPLORER 22	899	US	10 OCT	104.6	79.6	1074	886		
1964 064B		907	US	10 OCT	104.6	79.6	1074	887		
1964 064C		976	US	10 OCT	103.8	79.3	1049	833		
1964 064D		977	US	10 OCT	105.3	80.0	1118	905		
1964 073A	MARINER 3	923	US	5 NOV	HELIOCENTRIC ORBIT					
1964 074A	EXPLORER 23	924	US	6 NOV	97.6	51.9	837	450		
1964 076B	EXPLORER 25	932	US	21 NOV	115.8	81.3	2462	529		
1964 076C		933	US	21 NOV	115.7	81.3	2445	532		
1964 076D		934	US	21 NOV	111.0	81.3	2030	522		
1964 076E		935	US	21 NOV	111.1	81.3	2040	525		
1964 076G		937	US	21 NOV	109.2	81.3	1886	502		
1964 076J		941	US	21 NOV	112.0	81.3	2119	522		
1964 076K		960	US	21 NOV	112.0	81.3	2088	553		
1964 076N		940	US	21 NOV	108.6	81.3	1814	520		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1964 LAUNCHES (CONT'D)										
1964 077A	MARINER 4	938	US	28 NOV	HELIOCENTRIC ORBIT					
1964 077B		942	US	28 NOV	HELIOCENTRIC ORBIT					
1964 078C	ZOND 2	945	USSR	30 NOV	HELIOCENTRIC ORBIT					
1964 083A		953	US	13 DEC	106.1	89.7	1071	1023		
1964 083B		956	US	13 DEC	106.1	89.7	1079	1020		
1964 083C		959	US	13 DEC	106.2	89.7	1083	1022		
1964 083D		965	US	13 DEC	106.2	89.7	1087	1024		
1964 083E		966	US	13 DEC	106.2	89.7	1083	1022		
1964 083F		967	US	13 DEC	106.1	89.7	1079	1020		
1964 083G		1099	US	13 DEC	106.2	89.7	1083	1022		
1964 083H		1528	US	13 DEC	103.8	80.8	992	891		
1964 083J		1608	US	13 DEC	106.0	89.7	1072	1017		
1964 083K		2798	US	13 DEC	101.2	89.7	862	781		
1964 083L		5444	US	13 DEC	101.2	89.7	863	779		
1964 083M		5540	US	13 DEC	101.4	89.7	860	801		
1964 086A	EXPLORER 26	963	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1964 086C		5992	US	21 DEC	129.9	18.0	4057	179		
1965 LAUNCHES										
1965 003A		973	US	19 JAN	94.5	98.7	583	414		
1965 004A	TIROS 9	978	US	22 JAN	119.1	96.4	2577	707		
1965 004B		979	US	22 JAN	119.1	96.4	2582	707		
1965 004C		1312	US	22 JAN	117.9	96.3	2503	674		
1965 004D		1313	US	22 JAN	120.3	96.4	2659	732		
1965 007A	OSO 2	987	US	3 FEB	95.8	52.8	592	527		
1965 008A		1001	US	11 FEB	145.3	32.1	2791	2764		
1965 008B		1000	US	11 FEB	145.6	32.1	2795	2782		
1965 008C		1092	US	11 FEB	145.7	32.1	2806	2779		
1965 009A	PEGASUS 1	1085	US	16 FEB	93.3	31.7	470	405		
1965 009B		1088	US	16 FEB	96.2	31.7	667	482		
1965 010B		1087	US	17 FEB	BARYCENTRIC ORBIT					
1965 014A	COSMOS 58	1097	USSR	26 FEB	96.3	65.0	619	551		
1965 014B		1098	USSR	26 FEB	96.1	65.0	645	504		
1965 016A	GREB	1271	US	9 MAR	103.4	70.0	936	907		
1965 016B	GRAVITY GRADIENT 2	1244	US	9 MAR	103.4	70.0	938	907		
1965 016C	GRAVITY GRADIENT 3	1292	US	9 MAR	103.3	70.0	936	904		
1965 016D	SOLAR RAD.	1291	US	9 MAR	103.4	70.0	938	907		
1965 016E	EGRS 1	1208	US	9 MAR	103.4	70.0	937	907		
1965 016F	OSCAR 3	1293	US	9 MAR	103.3	70.0	932	902		
1965 016G	SURCAL	1310	US	9 MAR	101.8	70.0	864	830		
1965 016H	DODECAHEDRON	1272	US	9 MAR	103.4	70.0	939	906		
1965 016J		1245	US	9 MAR	103.4	70.0	936	904		
1965 020D - 020FE			USSR	15 MAR	SEE NOTE 4*					
1965 021A		1273	US	18 MAR	96.8	99.0	704	612		
1965 021C		1289	US	18 MAR	95.2	99.0	584	477		
1965 021F		1463	US	18 MAR	95.6	99.0	624	476		
1965 023B		1298	US	21 MAR	HELIOCENTRIC ORBIT					
1965 027A		1314	US	3 APR	111.5	90.2	1319	1274		
1965 027B	EGRS 4	1315	US	3 APR	111.4	90.2	1317	1270		
1965 027C		1316	US	3 APR	111.1	90.2	1317	1246		
1965 027D		1389	US	3 APR	111.1	90.2	1306	1259		
1965 027E		1399	US	3 APR	101.0	90.5	866	781		
1965 028A	EARLY BIRD	1317	USSR	6 APR	CURRENT ELEMENTS NOT MAINTAINED					
1965 028B		1318	US	6 APR	CURRENT ELEMENTS NOT MAINTAINED					
1965 030A	MOLNIYA 1	1324	USSR	23 APR	719.9	64.6	32715	747		
1965 030D		1967	USSR	23 APR	702.5	64.7	38973	627		
1965 032A	EXPLORER 27	1328	US	29 APR	107.7	41.1	1319	928	136.740	5*
1965 032B		1358	US	29 APR	107.7	41.1	1318	929		
1965 032C		1995	US	29 APR	106.3	41.1	1372	737		
1965 032D		2011	US	29 APR	108.8	41.1	1271	1074		
1965 034A		1359	US	6 MAY	157.0	32.1	3740	2782		
1965 034B		1360	US	6 MAY	309.8	32.1	14811	2769		
1965 034C		1361	US	6 MAY	145.5	32.1	2798	2775		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1965 LAUNCHES (CONT'D)										
1965 034D		2529	US	6 MAY	309.8	32.0	14807	2773		
1965 038A		1377	US	20 MAY	99.5	98.0	927	550		
1965 038B		1378	US	20 MAY	99.3	98.0	913	546		
1965 038C		1379	US	20 MAY	98.8	98.2	866	542		
1965 038E		1461	US	20 MAY	99.8	98.2	967	541		
1965 038F		1462	US	20 MAY	96.8	98.5	707	515		
1965 038G		1475	US	20 MAY	99.1	98.0	896	539		
1965 039A	PEGASUS 2	1381	US	25 MAY	95.1	31.7	585	462		
1965 039B		1385	US	25 MAY	96.4	31.7	681	495		
1965 044A	LUNIK 6	1393	USSR	8 JUN	HELIOCENTRIC ORBIT					
1965 048A		1420	US	24 JUN	106.8	89.8	1138	1026		
1965 048B		1428	US	24 JUN	106.5	89.8	1110	1027		
1965 048C		1426	US	24 JUN	106.8	89.8	1138	1027		
1965 048D		1435	US	24 JUN	106.6	89.8	1127	1020		
1965 048E		2701	US	24 JUN	106.4	89.8	1104	1023		
1965 048F		3592	US	24 JUN	106.4	89.8	1106	1024		
1965 051A	TIROS 10	1430	US	2 JUL	100.5	98.1	832	742		
1965 051B		1433	US	2 JUL	100.5	98.2	829	740		
1965 051C		1440	US	2 JUL	98.8	98.5	802	604		
1965 051D		1529	US	2 JUL	101.9	98.6	880	821		
1965 053B	COSMOS 72	1442	USSR	16 JUL	94.0	56.0	481	460		
1965 053D	COSMOS 74	1444	USSR	16 JUL	94.5	56.0	521	471		
1965 053E	COSMOS 75	1445	USSR	16 JUL	94.5	56.0	523	474		
1965 053F		1448	USSR	16 JUL	95.6	56.0	587	512		
1965 056A	ZOND 3	1454	USSR	18 JUL	HELIOCENTRIC ORBIT					
1965 058A		1458	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 058B		1459	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 058C		1460	US	20 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1965 063A	EGRS 5	1506	US	10 AUG	122.2	69.2	2427	1133		
1965 063B		1502	US	10 AUG	122.2	69.2	2426	1135		
1965 064A	CENTAUR 6	1503	US	11 AUG	BARYCENTRIC ORBIT					
1965 065A		1504	US	13 AUG	108.0	90.0	1190	1081		
1965 065B		1508	US	13 AUG	107.8	89.9	1161	1094		
1965 065C		1510	US	13 AUG	107.4	90.0	1163	1060		
1965 065D		1511	US	13 AUG	108.0	90.0	1193	1084		
1965 065E		1512	US	13 AUG	108.0	90.0	1194	1085		
1965 065F		1514	US	13 AUG	108.0	90.0	1195	1083		
1965 065G		1515	US	13 AUG	107.8	90.0	1181	1075		
1965 065H		1520	US	13 AUG	108.0	90.0	1194	1083		
1965 065J		1521	US	13 AUG	108.0	90.0	1194	1085		
1965 065K		1577	US	13 AUG	108.0	90.0	1193	1083		
1965 065L		1522	US	13 AUG	108.1	90.0	1196	1084		
1965 065M		2335	US	13 AUG	106.0	89.9	1121	969		
1965 065N		3809	US	13 AUG	105.9	89.9	1088	996		
1965 065P		3810	US	13 AUG	105.2	89.9	1054	958		
1965 065Q		5265	US	13 AUG	107.8	89.9	1162	1096		
1965 065R		5363	US	13 AUG	105.3	89.9	1060	960		
1965 065S		6290	US	13 AUG	106.0	89.9	1084	1006		
1965 070A	COSMOS 80	1570	USSR	3 SEP	114.9	56.0	1543	1364		
1965 070B	COSMOS 81	1571	USSR	3 SEP	113.3	56.0	1547	1393		
1965 070C	COSMOS 82	1572	USSR	3 SEP	115.6	56.0	1554	1418		
1965 070D	COSMOS 83	1573	USSR	3 SEP	116.0	56.0	1562	1443		
1965 070E	COSMOS 84	1574	USSR	3 SEP	116.4	56.0	1572	1467		
1965 070F		1575	USSR	3 SEP	114.5	56.1	1514	1358		
1965 070G		3045	USSR	3 SEP	116.0	55.4	1737	1266		
1965 072A		1580	US	10 SEP	101.7	98.8	1041	649		
1965 072D		1583	US	10 SEP	101.6	98.8	1028	646		
1965 072E		1931	US	10 SEP	103.0	98.7	1155	649		
1965 072F		1932	US	10 SEP	100.3	98.3	911	640		
1965 073A	COSMOS 86	1584	USSR	18 SEP	115.0	56.0	1630	1285		
1965 073B	COSMOS 87	1585	USSR	18 SEP	115.4	56.0	1639	1313		
1965 073C	COSMOS 88	1586	USSR	18 SEP	115.8	56.0	1652	1334		
1965 073D	COSMOS 89	1587	USSR	18 SEP	116.2	56.0	1666	1358		
1965 073E	COSMOS 90	1588	USSR	18 SEP	116.6	56.0	1679	1382		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1965 LAUNCHES (CONT'D)										
1965 073F		1589	USSR	18 SEP	116.8	56.0	1688	1385		
1965 073G		1590	USSR	18 SEP	116.3	56.0	1655	1376		
1965 073H		1591	USSR	18 SEP	116.5	56.0	1677	1375		
1965 073J		1617	USSR	18 SEP	117.3	56.1	1747	1376		
1965 073K		1618	USSR	18 SEP	117.5	56.1	1754	1390		
1965 073L		2647	USSR	18 SEP	116.0	56.0	1656	1353		
1965 078A		1613	US	5 OCT	123.5	144.2	3265	411		
1965 078B		1616	US	5 OCT	123.1	144.2	3230	411		
1965 081A	OGO 2	1620	US	14 OCT	100.3	87.3	1154	402		
1965 081B		1625	US	14 OCT	101.4	87.3	1243	409		
1965 082B	- 082UJ		US	15 OCT	SEE NOTE					6*
1965 089A	EXPLORER 29	1726	US	6 NOV	120.3	59.3	2277	1112		
1965 089B		1729	US	6 NOV	120.2	59.3	2275	1113		
1965 089C		2700	US	6 NOV	119.1	59.5	2223	1065		
1965 089D		2888	US	6 NOV	121.3	59.1	2324	1156		
1965 091A	VENERA 2	1730	USSR	12 NOV	HELIOCENTRIC ORBIT					
1965 092D		1736	USSR	16 NOV	HELIOCENTRIC ORBIT					
1965 093A	EXPLORER 30	1738	US	19 NOV	100.6	59.7	904	675		
1965 093B		1739	US	19 NOV	100.5	59.7	875	697		
1965 093C		2013	US	19 NOV	99.9	59.6	826	688		
1965 093D		2000	US	19 NOV	101.1	59.7	911	716		
1965 096A	A-1	1778	FRANCE	26 NOV	108.4	34.2	1776	526		
1965 096B		1805	FRANCE	26 NOV	108.1	34.2	1754	524		
1965 096D		1995	FRANCE	26 NOV	107.2	34.2	1667	523		
1965 098A	ALOUETTE 2	1804	CANADA	29 NOV	120.7	79.8	2920	508		
1965 098B	EXPLORER 31	1806	US	29 NOV	121.1	79.8	2957	507		
1965 098C		1807	US	29 NOV	120.8	79.8	2929	507		
1965 098D		1808	US	29 NOV	118.3	79.8	2707	506		
1965 098E		1944	US	29 NOV	119.1	79.7	2693	507		
1965 098F		1948	US	29 NOV	119.6	79.8	2819	512		
1965 098G		1951	US	29 NOV	119.5	79.7	2811	511		
1965 098H		2092	US	29 NOV	120.7	79.8	2921	510		
1965 098J		2153	US	29 NOV	120.5	79.7	2911	506		
1965 101A	FR-1	1814	FRANCE	6 DEC	99.7	75.8	752	739		
1965 101B		1815	US	6 DEC	99.7	75.8	756	743		
1965 101C		1934	FRANCE	6 DEC	98.9	76.4	733	686		
1965 101D		1935	FRANCE	6 DEC	98.2	75.2	706	644		
1965 105A	PIONEER 6	1841	US	16 DEC	HELIOCENTRIC ORBIT					
1965 106A	COSMOS 100	1843	USSR	17 DEC	97.3	65.0	727	539		
1965 106B		1844	USSR	17 DEC	97.2	64.9	642	513		
1965 108B	LFS 4	1870	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 108C	OSCAR 4	1902	US	21 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1965 109A		1864	US	22 DEC	104.9	89.0	1079	908		
1965 109B		1865	US	22 DEC	104.9	89.0	1079	904		
1965 109C		2086	US	22 DEC	104.3	89.1	961	880		
1965 109D		2226	US	22 DEC	107.1	89.0	1290	900		
1965 109E		2353	US	22 DEC	105.3	89.4	1131	891		
1965 112A	COSMOS 103	1868	USSR	28 DEC	96.4	56.0	602	576		
1965 112B		1869	USSR	28 DEC	96.3	56.0	601	562		
1965 112Q		1937	USSR	28 DEC	96.5	55.9	630	561		

1966 LAUNCHES

1966 000R		2429	UNKN	UNKN	CURRENT ELEMENTS NOT MAINTAINED					7*
1966 000C		2430	UNKN	UNKN	CURRENT ELEMENTS NOT MAINTAINED					7*
1966 005A		1952	US	28 JAN	105.8	89.7	1207	862		
1966 005B		1953	US	28 JAN	105.8	89.7	1208	863		
1966 005C		2140	US	28 JAN	107.7	89.9	1382	862		
1966 005D		2141	US	28 JAN	104.2	89.8	1077	840		
1966 005E		2889	US	28 JAN	109.5	89.5	1339	1078		
1966 005F		2980	US	28 JAN	104.2	89.7	1061	861		
1966 005G		4587	US	28 JAN	105.7	89.8	1048	1015		
1966 006D		2001	USSR	31 JAN	BARYCENTRIC ORBIT					
1966 008A	ESSA 1	1982	US	3 FEB	100.1	97.8	835	703		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1966 LAUNCHES (CONT'D)										
1966 008B		1983	US	3 FEB	100.3	97.8	853	698		
1966 008C		2085	US	3 FEB	98.9	97.7	738	676		
1966 008D		2118	US	3 FEB	101.1	97.9	939	691		
1966 008E		2154	US	3 FEB	100.0	97.7	821	707		
1966 013A	D-1A	2016	FRANCE	17 FEB	117.9	34.0	2672	501		
1966 013B		2017	FRANCE	17 FEB	117.7	34.0	2656	503		
1966 013F		2023	FRANCE	17 FEB	113.9	34.0	2336	478		
1966 013G		2161	FRANCE	17 FEB	117.1	34.1	2586	512		
1966 013J		3970	FRANCE	17 FEB	113.7	34.0	2306	491		
1966 013K		5420	FRANCE	17 FEB	113.6	34.0	2292	493		
1966 013L		5959	FRANCE	17 FEB	113.4	34.0	2277	491		
1966 016A	ESSA 2	2091	US	28 FEB	113.4	101.2	1417	1356		
1966 016B		2096	US	28 FEB	113.4	101.1	1418	1356		
1966 016C		2223	US	28 FEB	111.9	100.9	1388	1242		
1966 016D		2224	US	28 FEB	115.0	101.0	1567	1351		
1966 016E		6214	US	28 FEB	114.4	101.4	1551	1340		
1966 024A		2119	US	26 MAR	105.2	89.8	1118	893		
1966 024B		2120	US	26 MAR	105.2	89.8	1120	894		
1966 024C		2386	US	26 MAR	105.0	89.9	1107	891		
1966 024D		3590	US	26 MAR	98.3	89.7	713	646		
1966 025A	OV1-4	2121	US	30 MAR	104.0	144.4	1011	885		
1966 025B	OV1-5	2122	US	30 MAR	105.6	144.6	1057	984		
1966 025C		2123	US	30 MAR	105.6	144.6	1056	985		
1966 025D		2124	US	30 MAR	104.0	144.5	1010	886		
1966 025E		3611	US	30 MAR	105.0	144.5	1063	927		
1966 025G		5361	US	30 MAR	105.1	144.6	1037	960		
1966 025H		5599	US	30 MAR	105.0	144.5	1070	922		
1966 026A		2125	US	31 MAR	100.3	98.3	924	625		
1966 026B		2129	US	31 MAR	100.1	98.2	907	622		
1966 026D		2177	US	31 MAR	101.9	98.9	1083	624		
1966 026E		2178	US	31 MAR	97.8	98.5	717	600		
1966 026F		2179	US	31 MAR	99.7	98.1	875	618		
1966 027A	LUNA 10	2126	USSR	31 MAR	SELENOCENTRIC ORBIT					
1966 027D		2130	USSR	31 MAR	HELIOCENTRIC ORBIT					
1966 027E		2131	USSR	31 MAR	BARYCENTRIC ORBIT					
1966 027F		2132	USSR	31 MAR	BARYCENTRIC ORBIT					
1966 031A	DAO 1	2142	US	8 APR	100.8	35.0	802	789		
1966 031B		2144	US	8 APR	100.7	35.0	799	781		
1966 031C		2145	US	8 APR	99.7	35.0	750	738		
1966 034A	OV3-1	2150	US	22 APR	147.3	82.4	5384	347		
1966 034B		2167	US	22 APR	141.8	82.4	4916	349		
1966 034D		2209	US	22 APR	134.4	82.3	4305	328		
1966 034E		9998	US	22 APR	144.9	82.3	5176	354		
1966 038A	COSMOS 11P	2168	USSR	11 MAY	96.5	65.0	611	574		
1966 038B		2169	USSR	11 MAY	96.4	64.9	628	549		
1966 040A	NIMBUS 2	2173	US	15 MAY	108.0	100.5	1180	1098		
1966 040B		2174	US	15 MAY	107.8	100.4	1172	1085		
1966 041A		2176	US	19 MAY	103.2	89.7	974	855		
1966 041B		2180	US	19 MAY	103.3	89.7	978	857		
1966 041C		2225	US	19 MAY	100.9	89.7	846	763		
1966 041D		2644	US	19 MAY	105.4	89.7	1193	844		
1966 041E		3591	US	19 MAY	103.3	89.7	975	856		
1966 041F		4555	US	19 MAY	103.1	89.7	971	851		
1966 044A	EXPLORER 32	2183	US	25 MAY	107.2	64.5	1931	264		
1966 045B		2187	US	20 MAY	BARYCENTRIC ORBIT					
1966 049A	OGO 3	2190	US	7 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 052A		2201	US	10 JUN	143.0	40.8	4724	642		
1966 052B		2206	US	10 JUN	143.0	40.8	4714	644		
1966 052C		2498	US	10 JUN	140.5	40.6	4559	581		
1966 052D		2516	US	10 JUN	145.1	41.0	4835	702		
1966 053A		2207	US	16 JUN	133.9	4.2	33877	33645		
1966 053B		2215	US	16 JUN	133.6	4.1	33867	33683		
1966 053C		2216	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053D		2217	US	16 JUN	133.4	4.0	33923	33702		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1966 LAUNCHES (CONT'D)										
1966 053E		2218	US	16 JUN	1338.5	4.2	34014	33694		
1966 053F		2219	US	16 JUN	1340.8	4.2	34120	33681		
1966 053G		2220	US	16 JUN	1343.9	4.2	34192	33734		
1966 053H		2221	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 053J		2222	US	16 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1966 056A	PAGES 1	2253	US	24 JUN	180.0	84.8	5816	2556		
1966 056B	056CF		US	24 JUN	SEE NOTE 8*					8*
1966 057A	COSMOL 122	2254	USSR	25 JUN	96.5	64.9	605	578		
1966 057B		2257	USSR	25 JUN	96.2	64.9	649	511		
1966 058A	EXPLORER 33	2258	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 058C		2260	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1966 063A	OV1-8	2324	US	14 JUL	95.9	144.1	564	558		
1966 063B		2327	US	14 JUL	104.9	144.2	1006	978		
1966 063C		2328	US	14 JUL	105.2	144.2	1010	996		
1966 063D		2329	US	14 JUL	105.2	144.2	1006	999		
1966 063E		2337	US	14 JUL	105.2	144.2	1009	1001		
1966 070A	OV3-3	2389	US	4 AUG	132.4	81.4	4100	357		
1966 070B		2404	US	4 AUG	127.1	81.4	3641	355		
1966 070D		2800	US	4 AUG	135.8	81.4	4330	422		
1966 073B		2395	US	10 AUG	BARYCENTRIC ORBIT					
1966 075A	PIONEER 7	2398	US	17 AUG	HELIOCENTRIC ORBIT					
1966 075C		2402	US	17 AUG	HELIOCENTRIC ORBIT					
1966 076A		2401	US	18 AUG	105.7	88.8	1099	1052		
1966 076B		2413	US	18 AUG	105.7	88.8	1100	1054		
1966 076C		2580	US	18 AUG	105.2	89.1	1084	930		
1966 076D		2702	US	18 AUG	108.2	88.5	1220	1078		
1966 076E		7558	US	18 AUG	106.2	88.8	1078	1029		
1966 076F		8000	US	18 AUG	105.3	88.8	1079	1034		
1966 076G		9461	US	18 AUG	106.5	88.8	1100	1036		
1966 077A		2403	US	19 AUG	167.4	89.8	3708	3665		
1966 077B	EGRS 7	2411	US	19 AUG	157.5	89.8	3704	3674		
1966 077C	ERS 15	2412	US	19 AUG	167.6	89.8	3703	3683		
1966 078A	LUNA 11	2406	USSR	24 AUG	SELENCENTRIC ORBIT					
1966 082A		2418	US	16 SEP	100.7	98.5	894	693		
1966 082B		2422	US	16 SEP	100.7	98.6	893	693		
1966 084B		2426	US	20 SEP	BARYCENTRIC ORBIT					
1966 087A	ESSA-3	2435	US	2 OCT	114.5	101.0	1487	1388		
1966 087B		2436	US	2 OCT	114.5	101.0	1488	1386		
1966 087C		2518	US	2 OCT	115.9	100.8	1562	1435		
1966 087D		2775	US	2 OCT	113.2	101.6	1474	1283		
1966 087E		6213	US	2 OCT	114.2	101.5	1467	1378		
1966 087F		8791	US	2 OCT	114.6	101.4	1549	1330		
1966 089A		2481	US	5 OCT	167.5	90.3	3700	3683		
1966 089B	EGRS 8	2520	US	5 OCT	167.6	90.3	3697	3690		
1966 094A	LUNA 12	2508	USSR	22 OCT	SELENCENTRIC ORBIT					
1966 095B		2513	US	25 OCT	BARYCENTRIC ORBIT					
1966 096A	INTELSAT 2 F-1	2514	ITSO	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1966 110A	ATS 1	2608	US	7 DEC	1435.2	8.4	35794	35782	136.470, 137.350	5*
1966 111A	OV1-9	2610	US	11 DEC	141.6	99.1	4773	477		
1966 111B	OV1-10	2611	US	11 DEC	98.5	93.3	750	626		
1966 111C		2621	US	11 DEC	98.6	93.4	760	631		
1966 111D		2622	US	11 DEC	141.5	99.1	4760	479		
1967 LAUNCHES										
1967 001A	INTELSAT 2 F-2	2639	ITSO	11 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 001B	- 001X		US	11 JAN	SEE NOTE 9*					9*
1967 003A		2645	US	18 JAN	1329.5	3.8	33823	33523		
1967 003B		2649	US	18 JAN	1329.9	3.6	33831	33532		
1967 003C		2650	US	18 JAN	1330.6	3.6	33898	33494		
1967 003D		2651	US	18 JAN	1332.1	3.6	33876	33676		
1967 003E		2652	US	18 JAN	1334.1	3.7	33972	33559		
1967 003F		2653	US	18 JAN	1336.5	4.3	33986	33641		
1967 003G		2654	US	18 JAN	1339.5	3.8	34112	33636		

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INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1967 LAUNCHES (CONT'D)										
1967 003H		2655	US	18 JAN	1343.0	3.8	34237	33651		
1967 003J		2660	JS	18 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1967 006A	ESSA 4	2657	US	26 JAN	113.4	101.9	1441	1328		
1967 006B		2661	US	26 JAN	113.6	101.9	1444	1343		
1967 006C		2706	US	26 JAN	114.2	102.0	1451	1395		
1967 006D		2707	US	26 JAN	112.6	101.8	1464	1232		
1967 006E		5971	US	26 JAN	113.1	101.9	1458	1285		
1967 010A		2669	US	8 FEB	101.4	99.1	867	786		
1967 010B		2741	US	8 FEB	101.4	99.1	871	784		
1967 011A	DIADEME 1	2674	FRANCE	8 FEB	103.7	39.9	1304	562		
1967 011B		2671	FRANCE	8 FEB	103.7	39.9	1322	567		
1967 011G		2688	FRANCE	8 FEB	103.7	40.0	1063	536		
1967 011H		2689	FRANCE	8 FEB	103.7	39.9	1316	537		
1967 011L		2692	FRANCE	8 FEB	101.8	39.9	1141	547		
1967 011M		2900	FRANCE	8 FEB	101.8	39.9	1075	535		
1967 011N		2990	FRANCE	8 FEB	100.1	39.9	1049	534		
1967 011P		3742	FRANCE	8 FEB	101.1	39.9	1087	538		
1967 011Q		4009	FRANCE	8 FEB	108.4	39.4	1741	564		
1967 014A	DIADEME 2	2680	FRANCE	15 FEB	109.8	39.4	1851	586		
1967 014B		2682	FRANCE	15 FEB	110.0	39.4	1867	587		
1967 014C		2684	FRANCE	15 FEB	109.4	39.4	1820	580		
1967 014E		2683	FRANCE	15 FEB	108.1	39.4	1713	563		
1967 014F		2685	FRANCE	15 FEB	109.1	38.9	1798	574		
1967 014G		3589	FRANCE	15 FEB	115.1	38.8	2732	592		
1967 014H		3935	FRANCE	15 FEB	108.3	39.4	1737	562		
1967 018A	COSMOS 144	2695	USSR	28 FEB	96.1	81.1	595	556		
1967 018B		2696	USSR	28 FEB	96.3	81.1	660	509		
1967 020A	OSO 3	2703	US	8 MAR	94.8	32.8	520	499		
1967 026A	INTELSAT 2 F-3	2717	ITSO	23 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1967 027A	COSMOS 151	2720	USSR	24 MAR	96.7	56.0	626	576		
1967 027B		2721	USSR	24 MAR	96.6	56.0	620	571		
1967 034A		2754	US	14 APR	106.4	90.2	1079	1047		
1967 034B		2755	US	14 APR	106.5	90.2	1081	1050		
1967 034C		2777	US	14 APR	104.0	90.3	1067	839		
1967 034D		2778	US	14 APR	108.6	90.1	1266	1066		
1967 034E		4843	US	14 APR	104.5	90.2	982	967		
1967 034F		6718	US	14 APR	104.6	90.2	987	960		
1967 034G		7670	US	14 APR	105.9	90.1	1066	1016		
1967 035B		2764	US	17 APR	BARYCENTRIC ORBIT					
1967 036A	ESSA 5	2757	US	20 APR	113.5	101.8	1424	1356		
1967 036B		2758	US	20 APR	113.5	101.9	1422	1358		
1967 036C		2976	US	20 APR	112.3	102.1	1412	1261		
1967 036D		2977	US	20 APR	114.6	101.8	1486	1392		
1967 039A	COSMOS 156	2762	USSR	27 APR	96.4	81.1	610	566		
1967 039B		2763	USSR	27 APR	96.6	81.1	674	529		
1967 040A		2765	US	28 APR	6689.6	37.3	119465	102991		
1967 040B		2766	US	28 APR	6708.7	37.1	123849	99054		
1967 040C	ERS 18	2767	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040D	ERS 20	2768	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040E	ERS 27	2769	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 040F		2770	US	28 APR	CURRENT ELEMENTS NOT MAINTAINED					
1967 043B		2780	US	9 MAY	97.8	84.9	766	549		
1967 045A	COSMOS 158	2801	USSR	15 MAY	100.4	74.0	821	737		
1967 045B		2802	USSR	15 MAY	100.5	74.0	843	729		
1967 045C		2823	USSR	15 MAY	109.2	74.0	816	724		
1967 045D		3737	USSR	15 MAY	100.1	74.0	819	714		
1967 046C	COSMOS 159	2805	USSR	17 MAY	1172.6	51.8	60753	163		
1967 046F		2924	USSR	17 MAY	1060.0	52.2	55791	326		
1967 048A		2807	US	18 MAY	106.9	89.6	1103	1069		
1967 048B		2811	US	18 MAY	106.9	89.6	1102	1069		
1967 053A		2826	US	31 MAY	103.1	69.9	919	901		
1967 053B		2825	US	31 MAY	103.3	69.9	923	914		
1967 053C	GRAVITY GRADIENT 4	2828	US	31 MAY	103.3	69.9	925	913		
1967 053D	GRAVITY GRADIENT 5	2834	US	31 MAY	103.3	69.9	925	914		

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INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1967 LAUNCHES (CONT'D)										
1967 053E		2847	US	31 MAY	103.3	69.9	921	912		
1967 053F		2872	US	31 MAY	103.3	69.9	922	913		
1967 053G		2873	US	31 MAY	103.3	69.9	924	913		
1967 053H		2874	US	31 MAY	103.3	69.9	925	913		
1967 053J		2909	US	31 MAY	103.0	69.9	908	901		
1967 060A	MARINER 5	2845	US	14 JUN	HELIOCENTRIC ORBIT					
1967 060B		2846	US	14 JUN	HELIOCENTRIC ORBIT					
1967 065A	EGRS 9	2861	US	29 JUN	172.1	89.7	3942	3803		
1967 065B	AURORA 1	2876	US	29 JUN	172.1	89.7	3939	3807		
1967 065C		2877	US	29 JUN	172.1	89.7	3922	3824		
1967 066A	TITAN 3 C-14	2862	US	1 JUL	1309.7	3.9	33547	32983		
1967 066B		2863	US	1 JUL	1310.3	3.7	33588	32986		
1967 066C		2864	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066D		2865	US	1 JUL	1313.6	4.3	33558	33148		
1967 066E		2866	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066F	DODGE	2867	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 066G		2868	US	1 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1967 068B		2883	US	14 JUL	BARYCENTRIC ORBIT					
1967 070A	EXPLORER 35	2884	US	19 JUL	SELENOCENTRIC ORBIT					
1967 072D	OV1-12	2901	US	27 JUL	94.3	101.6	494	483		
1967 075B		2908	US	1 AUG	BARYCENTRIC ORBIT					
1967 080A		2920	US	23 AUG	102.1	98.6	890	830		
1967 080B		2940	US	23 AUG	102.1	98.6	890	830		
1967 084B		2938	US	8 SEP	BARYCENTRIC ORBIT					
1967 092A		2965	US	25 SEP	106.7	89.2	1115	1038		
1967 092B		2967	US	25 SEP	106.7	89.2	1113	1039		
1967 092C		2994	US	25 SEP	103.3	89.4	1047	884		
1967 092D		3122	US	25 SEP	103.1	89.0	1132	1044		
1967 094A	INTELSAT 2 F-4	2969	US	28 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1967 094C		2971	US	28 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1967 096A		2980	US	11 OCT	99.9	99.1	854	663		
1967 096B		2985	US	11 OCT	99.9	99.1	850	664		
1967 100A	OSO 4	3000	US	18 OCT	95.0	32.9	529	504		
1967 100B		3004	US	18 OCT	94.4	32.9	501	479		
1967 102A	COSMOS 184	3010	USSR	24 OCT	96.5	81.1	612	580		
1967 102B		3011	USSR	24 OCT	96.8	81.1	685	531		
1967 104B		3019	USSR	27 OCT	98.2	64.0	862	484		
1967 108A	COSMOS 189	3021	USSR	30 OCT	92.4	73.9	400	392		
1967 108B		3023	USSR	30 OCT	94.4	73.9	506	475		
1967 111A	ATS 3	3029	US	5 NOV	1436.2	6.9	35863	35714	136.470, 137.350	5*
1967 112B		3034	US	7 NOV	BARYCENTRIC ORBIT					
1967 114A	ESSA 6	3035	US	10 NOV	114.8	102.2	1487	1410		
1967 114B		3036	US	10 NOV	114.8	102.2	1487	1412		
1967 114C		3051	US	10 NOV	114.1	101.3	1487	1348		
1967 114D		3123	US	10 NOV	115.4	102.4	1498	1464		
1967 114E		5443	US	10 NOV	114.6	101.4	1488	1391		
1967 116A	COSMOS 192	3047	USSR	23 NOV	99.7	74.0	751	741		
1967 116B		3048	USSR	23 NOV	99.7	74.0	752	742		
1967 123A	PIONEER 8	3066	US	13 DEC	HELIOCENTRIC ORBIT					
1967 127A	COSMOS 198	3081	USSR	27 DEC	103.4	65.1	932	911		
1968 LAUNCHES										
1968 001B		3092	US	7 JAN	BARYCENTRIC ORBIT					
1968 002A	EXPLORER 36	3093	US	11 JAN	112.2	105.7	1575	1084		
1968 002B		3094	US	11 JAN	112.1	105.7	1570	1083		
1968 002C		3126	US	11 JAN	112.3	106.0	1587	1086		
1968 002D		3127	US	11 JAN	112.1	105.3	1576	1078		
1968 006C		3103	USSR	19 JAN	94.2	73.9	505	460		
1968 011A	COSMOS 203	3129	USSR	20 FEB	109.2	74.0	1203	1185		
1968 011B		3131	USSR	20 FEB	109.3	74.0	1206	1186		
1968 011C		3147	USSR	20 FEB	103.2	74.0	1103	719		
1968 012A		3133	US	2 MAR	106.9	89.9	1141	1028		
1968 012B		3137	US	2 MAR	106.9	89.9	1141	1028		

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1968 LAUNCHES (CONT'D)										
1968 012C		3213	US	2 MAR	105.1	89.8	1109	892		
1968 012D		3214	US	2 MAR	108.8	90.1	1319	1030		
1968 013A	ZOND 4	3134	USSR	2 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 014A	OGO 5	3138	US	4 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 014B		3145	US	4 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1968 017A	EXPLORER 37	3141	US	5 MAR	97.8	59.3	821	491		
1968 017B		3146	US	5 MAR	97.1	59.3	757	484		
1968 017D		3328	US	5 MAR	99.8	59.6	869	636		
1968 019A	COSMOS 206	3150	USSR	14 MAR	96.5	81.2	511	578		
1968 019B		3151	USSR	14 MAR	96.8	81.2	688	533		
1968 023A	COSMOS 209	3158	USSR	22 MAR	103.1	65.3	944	871		
1968 026A	OV1-13	3173	US	6 APR	199.4	99.9	9280	584		
1968 026B	OV1-14	3174	US	6 APR	207.7	100.0	9934	551		
1968 026C		3177	US	6 APR	207.9	99.9	9960	542		
1968 026D		3212	US	6 APR	199.3	99.9	9273	584		
1968 027A	LUNA 14	3178	USSR	7 APR	SELENOCENTRIC ORBIT					
1968 040A	COSMOS 220	3229	USSR	7 MAY	98.8	74.0	749	672		
1968 040B		3230	USSR	7 MAY	98.9	74.0	750	672		
1968 040C		3231	USSR	7 MAY	98.6	74.0	732	654		
1968 042A		3266	US	23 MAY	102.0	98.6	901	817		
1968 042B		3271	US	23 MAY	102.1	98.6	901	817		
1968 049A	COSMOS 226	3282	USSR	12 JUN	96.2	81.1	608	556		
1968 049B		3283	USSR	12 JUN	96.6	81.2	682	517		
1968 050A		3284	US	13 JUN	1335.2	2.4	33847	33728		
1968 050B		3285	US	13 JUN	1335.5	2.4	33855	33735		
1968 050C		3286	US	13 JUN	1336.3	2.3	33902	33719		
1968 050D		3287	US	13 JUN	1337.8	2.4	33962	33717		
1968 050E		3288	US	13 JUN	1339.8	2.4	34044	33716		
1968 050F		3289	US	13 JUN	1342.2	2.4	34112	33713		
1968 050G		3290	US	13 JUN	1345.3	2.4	34260	33721		
1968 050H		3291	US	13 JUN	1348.7	2.3	34345	33772		
1968 050J		3292	US	13 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1968 055A	EXPLORER 38	3307	US	4 JUL	224.2	120.8	5857	5841		
1968 055B		3315	US	4 JUL	156.6	120.6	5935	562		
1968 055C		3848	US	4 JUL	224.1	120.8	5862	5826		
1968 055D		4841	US	4 JUL	156.3	120.7	5930	544		
1968 063A		3334	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1968 066A	EXPLORER 39	3337	US	8 AUG	114.3	80.7	2128	722		
1968 066B	EXPLORER 40	3338	US	8 AUG	118.2	80.6	2525	683		
1968 066C		3341	US	8 AUG	118.2	80.6	2523	685		
1968 066D		3342	US	8 AUG	117.2	80.6	2439	680		
1968 066E		3343	US	8 AUG	117.6	80.6	2484	664		
1968 066F		3390	US	8 AUG	117.4	80.6	2444	693		
1968 066G		3391	US	8 AUG	117.4	80.6	2471	666		
1968 066H		3392	US	8 AUG	117.5	80.7	2443	696		
1968 066J		3393	US	8 AUG	117.2	80.6	2448	670		
1968 069A	ESSA 7	3345	US	16 AUG	114.9	102.0	1475	1432		
1968 069B		3346	US	16 AUG	114.8	101.9	1468	1430		
1968 069C		3416	US	16 AUG	113.7	101.6	1490	1304		
1968 069D		3417	US	16 AUG	116.1	102.0	1562	1459		
1968 069E		3974	US	16 AUG	114.9	102.0	1491	1426		
1968 069F		3975	US	16 AUG	114.9	102.0	1486	1419		
1968 069G		4499	US	16 AUG	115.1	102.0	1485	1439		
1968 070A	COSMOS 236	3347	USSR	27 AUG	96.4	56.0	606	575		
1968 070B		3349	USSR	27 AUG	96.1	56.0	601	551		
1968 081A	OV2-5	3428	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081B	ERS 28	3429	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081C	ERS 21	3430	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081D	LES 6	3431	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 081E		3432	US	26 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1968 090A	COSMOS 248	3503	USSR	19 OCT	93.5	62.2	459	437		
1968 091A	COSMOS 249	3504	USSR	20 OCT	112.0	62.3	2133	506		
1968 091B	- 091CK		USSR	20 OCT	SEE NOTE 10*					
1968 092A		3510	US	23 OCT	101.3	98.6	847	800		10*

OBJECTS IN ORBIT

OBJECTS IN ORBIT										
INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1968 LAUNCHES (CONT'D)										
1968 092R		3522	US	23 OCT	101.3	98.5	846	799		
1968 095A	COSMOS 250	3526	USSR	30 OCT	91.4	73.9	345	344		
1968 095B		3527	USSR	30 OCT	92.8	73.9	416	413		
1968 097A	COSMOS 252	3530	USSR	1 NOV	112.3	62.3	2130	543		
1968 097B	0970X		USSR	1 NOV	SEE NOTE 11*					11*
1968 100A	PIONEER 9	3533	US	8 NOV	HELIOCENTRIC ORBIT					
1968 100B	TETR 2	3534	US	8 NOV	94.6	32.8	651	350		
1968 100D		3547	US	8 NOV	92.2	32.8	449	315		
1968 106A	COSMOS 256	3576	USSR	30 NOV	109.3	74.0	1225	1174		
1968 106B		3577	USSR	30 NOV	109.2	74.0	1220	1168		
1968 110A	DAO-A2	3597	US	7 DEC	100.2	34.9	774	763		
1968 110B		3598	US	7 DEC	100.1	34.9	809	716		
1968 112B		3605	US	12 DEC	114.4	80.3	1472	1387		
1968 112C		3617	US	12 DEC	114.0	80.1	1450	1379		
1968 112D		3618	US	12 DEC	114.7	80.5	1511	1380		
1968 112E		3640	US	12 DEC	114.5	80.6	1459	1409		
1968 114A	ESSA 8	3615	US	15 DEC	114.6	101.4	1466	1415		
1968 114B		3616	US	15 DEC	115.1	101.5	1472	1449		
1968 114C		3811	US	15 DEC	112.8	101.9	1468	1252		
1968 114D		3812	US	15 DEC	116.3	101.8	1575	1463		
1968 116A	INTELSAT 3 F-2	3625	USSR	19 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1968 118B		3627	US	21 DEC	HELIOCENTRIC ORBIT					
1969 LAUNCHES										
1969 006A	OSO 5	3663	US	22 JAN	95.2	32.9	539	517		
1969 006B		3664	US	22 JAN	94.4	32.9	496	480		
1969 009A	ISIS 1	3669	CANADA	30 JAN	128.2	88.4	3515	580	136.080, 136.410, 136.590, 137.950, 401.750	5* 5* 5*
1969 009B		3670	US	30 JAN	128.0	88.4	3493	580		
1969 010B		3673	US	5 FEB	114.1	80.3	1436	1397		
1969 010C		3841	US	5 FEB	113.7	80.1	1427	1374		
1969 011A	INTELSAT 3 F-3	3674	USSR	6 FEB	1435.6	5.0	35779	35774		
1969 011B		5977	US	6 FEB	518.0	26.6	29611	363		
1969 013A		3691	US	9 FEB	1435.9	1.0	35803	35765		
1969 013B		3692	US	9 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1969 014A	MARINER 6	3759	US	25 FEB	HELIOCENTRIC ORBIT					
1969 014B		3760	US	25 FEB	HELIOCENTRIC ORBIT					
1969 016A	ESSA 9	3764	US	26 FEB	115.2	102.1	1506	1427		
1969 016B		3767	US	26 FEB	115.1	102.1	1502	1423		
1969 018B		3770	US	3 MAR	HELIOCENTRIC ORBIT					
1969 018C	LM/ASCENT	3771	US	3 MAR	130.8	28.9	4093	221		
1969 021A	COSMOS 269	3775	USSR	5 MAR	92.9	74.0	422	417		
1969 021B		3776	USSR	5 MAR	92.8	74.1	416	412		
1969 021T		3844	USSR	5 MAR	95.2	74.1	542	517		
1969 024A	COSMOS 272	3818	USSR	17 MAR	109.3	73.9	1211	1180		
1969 024B		3819	USSR	17 MAR	109.1	73.9	1199	1182		
1969 024C		6289	USSR	17 MAR	109.1	73.9	1198	1179		
1969 025C	OV1-19	3825	US	18 MAR	153.2	104.7	5744	469		
1969 025E		3827	US	18 MAR	152.8	104.7	5710	474		
1969 025F		3828	US	18 MAR	93.1	98.8	458	404		
1969 029A	METEOR	3835	USSR	24 MAR	97.6	81.1	673	626		
1969 029B	029AP		USSR	26 MAR	SEE NOTE 12*					12*
1969 030A	MARINER 7	3837	US	27 MAR	HELIOCENTRIC ORBIT					
1969 030B		3845	US	27 MAR	HELIOCENTRIC ORBIT					
1969 036A		3889	US	13 APR	CURRENT ELEMENTS NOT MAINTAINED					
1969 037A	NIMBUS 3	3890	US	14 APR	107.3	99.5	1134	1074		
1969 037B	EGRS 13	3891	US	14 APR	107.2	99.5	1132	1073		
1969 037C		3892	US	14 APR	107.4	99.5	1139	1079		
1969 043B		3943	US	18 MAY	HELIOCENTRIC ORBIT					
1969 043C	LM/DESCENT	3948	US	18 MAY	SELENOCENTRIC ORBIT					
1969 043D	LM/ASCENT	3949	US	18 MAY	HELIOCENTRIC ORBIT					
1969 045A	INTELSAT 3 F-4	3947	USSR	22 MAY	CURRENT ELEMENTS NOT MAINTAINED					

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLT- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1969 LAUNCHES (CONT'D)										
1969 046A	OV5-5/ERS-29	3950	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046B	OV5-6	3951	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 046C	OV5-9	3952	US	23 MAY	3114.9	32.9	113065	15483		
1969 046D		3954	US	23 MAY	6695.2	46.5	116477	106111		
1969 046E		3955	US	23 MAY	6706.9	46.5	117602	105258		
1969 046F		3956	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1969 051A	OGO 6	3986	US	5 JUN	96.5	81.9	807	379		
1969 051B		3987	US	5 JUN	97.0	81.9	843	396		
1969 053B		3993	US	21 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1969 059B		4040	US	16 JUL	HELIOCENTRIC ORBIT					
1969 059C	LUNAR MODULE	4041	US	16 JUL	SELENOCENTRIC ORBIT					
1969 062A		4047	US	23 JUL	101.2	98.4	853	786		13*
1969 062B		4048	US	23 JUL	101.2	98.4	853	786		
1969 064A	INTELSAT 3 F-5	4051	ITSO	26 JUL	131.8	30.3	4135	264		
1969 064C		4053	US	26 JUL	141.0	30.3	4926	266		
1969 068A	OSO 6	4065	US	9 AUG	94.3	32.9	505	463		
1969 069A	ATS 5	4068	US	12 AUG	1436.3	4.3	35798	35783	136.470,137.350	5*
1969 069B		4069	US	12 AUG	703.3	17.6	37308	2330		
1969 069C		5991	US	12 AUG	680.0	17.3	36987	1488		
1969 070A	COSMOS 292	4070	USSR	13 AUG	99.8	74.0	761	744		
1969 070B		4071	USSR	13 AUG	99.7	74.0	760	741		
1969 070C		4084	USSR	13 AUG	100.0	74.0	777	742		
1969 082B		4256	US	30 SEP	103.4	70.0	937	904		
1969 082C		4257	US	30 SEP	103.4	70.0	939	905		
1969 082D		4259	US	30 SEP	103.4	70.0	938	905		
1969 082E		4237	US	30 SEP	103.4	70.0	938	905		
1969 082F		4247	US	30 SEP	103.4	70.0	938	905		
1969 082G		4295	US	30 SEP	103.4	70.0	938	905		
1969 082H		4168	US	30 SEP	103.4	70.0	938	906		
1969 082J		4166	US	30 SEP	103.2	70.0	925	896		
1969 082K		4132	US	30 SEP	103.3	70.0	933	900		
1969 082L	082KL		US	30 SEP	SEE NOTE 14*					
1969 084A	METEOR	4119	USSR	6 OCT	97.4	81.2	662	614		14*
1969 084B		4120	USSR	6 OCT	97.5	81.2	742	545		
1969 091A	COSMOS 304	4138	USSR	21 OCT	99.8	74.0	760	740		
1969 091B		4139	USSR	21 OCT	99.6	74.0	746	737		
1969 097A	GRS-A/AZUR	4221	FRG	8 NOV	120.2	102.6	2995	187		
1969 097B		4222	US	8 NOV	118.8	102.8	2880	184		
1969 097C		4242	FRG	8 NOV	114.4	102.7	2482	181		
1969 097D		4243	FRG	8 NOV	114.1	103.0	2452	179		
1969 097E		4261	FRG	8 NOV	112.0	103.6	2255	185		
1969 097F		4265	FRG	8 NOV	107.5	102.2	1867	165		
1969 099B		4226	US	14 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 101A	SKYNET A	4250	UK	22 NOV	1436.0	3.8	35820	35749		
1969 101B		4251	US	22 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1969 103A	COSMOS 312	4254	USSR	24 NOV	108.5	74.0	1177	1144		
1969 103B		4255	USSR	24 NOV	108.3	74.0	1161	1144		
1969 107A	COSMOS 315	4273	USSR	20 DEC	93.6	74.0	459	448		
1969 107B		4274	USSR	20 DEC	93.5	74.0	457	440		
1970 LAUNCHES										
1970 003A	INTELSAT 3 F-6	4297	ITSO	15 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1970 003B		4298	US	15 JAN	608.2	28.1	34468	335		
1970 008A	ITOS 1	4320	US	23 JAN	115.0	102.0	1482	1436		
1970 008B	OSCAR 5	4321	AUSTRL	23 JAN	115.0	102.0	1479	1435		
1970 008C		4322	US	23 JAN	115.0	102.0	1481	1436		
1970 009A	SERT 2	4327	US	4 FEB	106.1	99.2	1051	1044		
1970 011A	OHSUMI	4330	JAPAN	11 FEB	139.0	31.0	4587	334		
1970 012A		4331	US	11 FEB	101.2	98.7	869	771		
1970 012B		4332	US	11 FEB	101.2	98.9	870	771		
1970 017A	DIAL-WIKA	4344	FRG	10 MAR	95.5	5.4	799	288		
1970 019A	METEOR	4349	USSR	17 MAR	95.8	81.1	601	520		
1970 019B		4350	USSR	17 MAR	95.9	81.1	673	458		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHz)	NOTES
1970 LAUNCHES (CONT'D)										
1970 021A	NATO 1	4353	NATO	20 MAR	1436.1	3.0	35822	35750		
1970 021B		4354	US	20 MAR	624.9	25.4	35348	322		
1970 021C		5975	US	20 MAR	636.4	25.5	35971	290		
1970 024A	COSMOS 330	4360	USSR	7 APR	93.9	74.0	474	462		
1970 024B		4361	USSR	7 APR	94.0	74.0	490	460		
1970 025A	NIMBUS 4	4362	US	8 APR	107.1	99.7	1103	1091		
1970 025B	TOPD 1	4363	US	8 APR	106.9	99.7	1090	1087		
1970 025C	025NO		US	8 APR	SEE NOTE	15*				15*
1970 027A		4366	US	8 APR	6697.0	44.4	112577	110053		
1970 027B		4368	US	8 APR	6701.1	44.4	113113	109613		
1970 028A	COSMOS 332	4369	USSR	11 APR	99.9	74.0	761	751		
1970 028B		4370	USSR	11 APR	99.8	74.0	765	735		
1970 032A	INTELSAT 3 F-7	4376	ITSO	23 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 032B		4377	US	23 APR	CURRENT ELEMENTS NOT MAINTAINED					
1970 034A		4382	PRC	24 APR	113.7	68.4	2359	438		
1970 034B		4392	PRC	24 APR	112.4	68.4	2240	436		
1970 034C		4400	PRC	24 APR	110.2	68.5	2057	420		
1970 036A	COSMOS 336	4383	USSR	25 APR	115.4	74.0	1488	1465		
1970 036B	COSMOS 337	4384	USSR	25 APR	116.2	74.0	1554	1469		
1970 036C	COSMOS 338	4385	USSR	25 APR	115.8	74.0	1520	1469		
1970 036D	COSMOS 339	4386	USSR	25 APR	115.0	74.0	1471	1447		
1970 036E	COSMOS 340	4387	USSR	25 APR	114.6	74.0	1471	1409		
1970 036F	COSMOS 341	4388	USSR	25 APR	113.9	74.0	1470	1344		
1970 036G	COSMOS 342	4399	USSR	25 APR	113.5	74.0	1469	1313		
1970 036H	COSMOS 343	4390	USSR	25 APR	114.2	74.0	1470	1377		
1970 036J		4391	USSR	25 APR	116.6	74.0	1590	1469		
1970 037A	METEOR	4393	USSR	28 APR	97.9	81.2	700	622		
1970 037B		4394	USSR	28 APR	98.1	81.2	773	569		
1970 037C		5055	USSR	28 APR	96.0	81.2	624	570		
1970 046A		4418	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 046B		4511	US	19 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1970 047A	METEOR	4419	USSR	23 JUN	102.0	81.2	887	829		
1970 047B		4420	USSR	23 JUN	102.2	81.2	921	812		
1970 055A	INTELSAT 3 F-8	4478	ITSO	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 055B		4486	US	23 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1970 062A	SKYNET B	4493	UK	19 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1970 064A	COSMOS 350	4497	USSR	20 AUG	94.9	74.0	523	508		
1970 064B		4498	USSR	20 AUG	93.9	74.0	480	452		
1970 067A	NNSS 0-19	4507	US	27 AUG	106.9	90.1	1219	955		
1970 067B		4515	US	27 AUG	106.9	90.1	1219	955		
1970 067C		5036	US	27 AUG	104.4	90.0	990	945		
1970 067D		5447	US	27 AUG	109.6	90.1	1466	954		
1970 067E		6372	US	27 AUG	106.0	90.1	1120	967		
1970 069A		4510	US	1 SEP	CURRENT ELEMENTS NOT MAINTAINED					
1970 070A		4512	US	3 SEP	101.1	98.2	871	761		
1970 070B		4513	US	3 SEP	101.1	98.9	873	760		
1970 079A	COSMOS 367	4564	USSR	3 OCT	104.5	65.2	1010	934		
1970 083A	COSMOS 371	4578	USSR	12 OCT	99.8	74.0	754	749		
1970 083B		4579	USSR	12 OCT	99.7	74.0	757	737		
1970 085A	METEOR	4583	USSR	15 OCT	97.2	81.2	637	623		
1970 085B		4584	USSR	15 OCT	97.4	81.2	725	547		
1970 085C		6330	USSR	15 OCT	97.3	81.2	722	546		
1970 086A	COSMOS 372	4588	USSR	16 OCT	100.7	74.0	804	784		
1970 086B		4589	USSR	16 OCT	100.6	74.0	806	772		
1970 086C		5357	USSR	16 OCT	100.6	74.0	798	782		
1970 086D		5358	USSR	16 OCT	100.9	74.0	810	800		
1970 087A	COSMOS 373	4590	USSR	20 OCT	93.7	62.8	481	438		
1970 089A	COSMOS 374	4594	USSR	23 OCT	111.6	62.9	2006	598		
1970 089B	089CU		USSR	23 OCT	SEE NOTE	16*				16*
1970 091A	COSMOS 375	4598	USSR	30 OCT	111.7	52.8	2057	561		
1970 091B	091AO		USSR	30 OCT	SEE NOTE	17*				17*
1970 093A		4630	US	6 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1970 093B		4632	US	6 NOV	CURRENT ELEMENTS NOT MAINTAINED					
1970 099A	COSMOS 379	4760	USSR	24 NOV	183.8	51.7	8475	186		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MPL/YES	INCLT- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1970 LAUNCHES (CONT'D)										
1970 102A	COSMOS 381	4783	USSR	2 DEC	104.8	74.0	1013	966		
1970 102B		4784	USSR	2 DEC	104.7	74.0	1006	964		
1970 102C		4840	USSR	2 DEC	104.4	74.0	995	944		
1970 102D		5225	USSR	2 DEC	104.6	74.0	992	961		
1970 102E		8764	USSR	2 DEC	104.5	74.0	994	958		
1970 102F		9754	USSR	2 DEC	104.7	74.0	1006	957		
1970 103A	COSMOS 382	4786	USSR	2 DEC	171.0	55.8	5184	2470		
1970 103B		4789	USSR	2 DEC	158.8	51.5	5081	1590		
1970 103C		4790	USSR	2 DEC	159.1	51.5	5083	1614		
1970 103D		5316	USSR	2 DEC	162.9	56.3	4760	2244		
1970 106A	NOAA 1	4793	US	11 DEC	114.8	102.0	1475	1426		
1970 106B		4794	US	11 DEC	114.8	102.0	1478	1422		
1970 106C		8828	US	11 DEC	116.5	101.7	1550	1506		
1970 107A	EXPLORER 42	4797	US	12 DEC	94.3	3.0	497	473		
1970 107B		4798	US	12 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1970 108A	COSMOS 385	4799	USSR	12 DEC	104.7	74.0	984	978		
1970 108B		4800	USSR	12 DEC	104.6	74.0	984	969		
1970 109A	PEOPLE	4801	FRANCE	12 DEC	96.5	15.0	687	494		
1970 109B		4802	FRANCE	12 DEC	98.5	15.0	742	631		
1970 109C		4803	FRANCE	12 DEC	96.5	15.0	687	494		
1970 109D		4819	FRANCE	12 DEC	95.6	14.0	626	472		
1970 109E		5264	FRANCE	12 DEC	95.7	15.0	633	474		
1970 111A	COSMOS 387	4806	USSR	16 DEC	94.5	3.9	502	494		
1970 111B		4807	USSR	16 DEC	94.4	7.0	503	482		
1970 113A	COSMOS 389	4813	USSR	18 DEC	97.9	81.1	685	635		
1970 113B		4814	USSR	18 DEC	97.9	81.2	724	599		

1971 LAUNCHES

1971 000A		4924	US	UNKN	274.8	17.9	14919	332		18*
1971 000B		4925	US	UNKN	274.5	19.7	14950	280		18*
1971 006C		4926	US	UNKN	306.7	19.8	17106	267		18*
1971 000E		5310	US	UNKN	1435.7	4.8	35795	35763		18*
1971 003A	METEOR	4849	USSR	20 JAN	97.4	81.2	649	626		
1971 003B		4850	USSR	20 JAN	97.5	81.2	728	562		
1971 006A	INTELSAT 4 F-2	4881	ITSO	26 JAN	1436.2	0.4	35801	35777		
1971 006B		4882	US	26 JAN	654.4	27.6	36558	621		
1971 009A	NATO 2	4902	NATO	3 FEB	1436.1	2.3	35803	35768		
1971 009B		4903	US	3 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1971 009D		5926	US	3 FEB	576.0	26.1	31891	1217		
1971 010A	COSMOS 394	4922	USSR	9 FEB	96.4	65.8	612	567		
1971 010B		4923	USSR	9 FEB	96.2	65.8	606	549		
1971 010C		4927	USSR	9 FEB	96.1	65.8	593	554		
1971 011A	TANSEI	4952	JAPAN	16 FEB	105.0	29.6	1103	983		
1971 011B		5126	JAPAN	16 FEB	104.7	29.6	992	973		
1971 011C		5419	JAPAN	16 FEB	100.1	30.4	1008	521		
1971 012A		4953	US	17 FEB	100.8	98.4	832	765		
1971 012B		4954	US	17 FEB	100.8	98.4	832	769		
1971 012C		4957	US	17 FEB	100.5	98.5	821	753		
1971 012D		4958	US	17 FEB	100.5	98.5	820	751		
1971 012E		4963	US	17 FEB	100.6	98.5	820	761		
1971 013A	COSMOS 395	4955	USSR	17 FEB	94.7	74.0	518	498		
1971 013B		4956	USSR	17 FEB	94.7	74.0	520	494		
1971 015A	COSMOS 397	4964	USSR	25 FEB	113.4	65.7	2202	571		
1971 015B	015CM		USSR	25 FEB	SEE NOTE 19*					
1971 016A	COSMOS 398	4966	USSR	26 FEB	193.3	51.5	9192	203		19*
1971 018A		5007	PRC	3 MAR	98.3	69.8	1110	251		
1971 019C		5045	US	13 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 020A	COSMOS 400	5050	USSR	18 MAR	104.9	65.8	1002	986		
1971 020B		5051	USSR	18 MAR	104.8	65.8	997	980		
1971 020C		5052	USSR	18 MAR	104.9	65.8	1003	986		
1971 021A		5053	US	21 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 021B		5054	US	21 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1971 024A	ISIS 2	5104	CANADA	1 APR	113.6	88.1	1427	1360	136.080, 136.410, 136.590, 137.950, 401.750	5* 5* 5*

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 024D		5106	US	1 APR	113.5	88.1	1424	1357		
1971 024C		5360	US	1 APR	113.6	88.2	1426	1361		
1971 025A	COSMOS 402	5105	USSR	1 APR	104.9	64.9	1032	951		
1971 028A	COSMOS 405	5117	USSR	7 APR	98.2	81.2	677	671		
1971 028B		5118	USSR	7 APR	98.3	81.2	746	611		
1971 028D		5724	USSR	7 APR	98.1	81.2	676	671		
1971 030A	TOURNESOL	5128	FRANCE	15 APR	95.3	46.3	627	444		
1971 030B		5135	FRANCE	15 APR	94.9	46.3	602	429		
1971 031A	METEOR	5142	USSR	17 APR	96.9	81.2	626	603		
1971 031B		5143	USSR	17 APR	97.1	81.2	700	550		
1971 035A	COSMOS 407	5174	USSR	23 APR	100.9	74.0	818	788		
1971 035B		5175	USSR	23 APR	100.8	74.0	822	774		
1971 035C		6300	USSR	23 APR	101.2	74.0	833	805		
1971 035D		5301	USSR	23 APR	101.3	74.0	840	806		
1971 035E		5778	USSR	23 APR	101.2	74.0	832	805		
1971 035F		5858	USSR	23 APR	101.1	74.0	826	805		
1971 035G		9569	USSR	23 APR	101.1	74.0	832	795		
1971 038A	COSMOS 409	5180	USSR	28 APR	109.3	74.0	1213	1178		
1971 038B		5181	USSR	28 APR	109.0	73.9	1229	1143		
1971 039A		5204	US	5 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1971 039B		5205	US	5 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1971 041A	COSMOS 411	5210	USSR	7 MAY	113.8	74.0	1492	1317		
1971 041B	COSMOS 412	5211	USSR	7 MAY	116.1	74.0	1536	1481		
1971 041C	COSMOS 413	5212	USSR	7 MAY	115.7	74.0	1509	1475		
1971 041D	COSMOS 414	5213	USSR	7 MAY	115.1	74.0	1496	1428		
1971 041E	COSMOS 415	5214	USSR	7 MAY	115.4	74.0	1503	1451		
1971 041F	COSMOS 416	5215	USSR	7 MAY	114.4	74.0	1494	1372		
1971 041G	COSMOS 417	5216	USSR	7 MAY	114.1	74.0	1494	1344		
1971 041H	COSMOS 418	5217	USSR	7 MAY	114.8	74.0	1495	1400		
1971 041J		5218	USSR	7 MAY	116.8	74.0	1594	1489		
1971 045A	MARS 2	5234	USSR	19 MAY	AREOCENTRIC ORBIT					
1971 046A	COSMOS 422	5238	USSR	22 MAY	105.0	74.0	1009	987		
1971 046B		5239	USSR	22 MAY	104.9	74.0	1001	985		
1971 049A	MARS 3	5252	USSR	28 MAY	AREOCENTRIC ORBIT					
1971 050A	COSMOS 425	5253	USSR	29 MAY	94.5	74.0	511	484		
1971 050B		5254	USSR	29 MAY	94.4	74.0	517	463		
1971 051A	MARINER 9	5261	US	30 MAY	AREOCENTRIC ORBIT					
1971 051B		5267	US	30 MAY	HELIOCENTRIC ORBIT					
1971 052A	COSMOS 426	5281	USSR	4 JUN	108.4	74.0	1924	384		
1971 052B		5282	USSR	4 JUN	108.3	74.0	1918	386		
1971 052F		5956	USSR	4 JUN	94.9	73.9	688	344		
1971 054A		5285	US	8 JUN	95.6	90.2	564	533		
1971 058A	EXPLORER 44	5317	US	8 JUL	94.4	51.1	567	419		
1971 059A	METEOR	5327	USSR	16 JUL	97.1	81.1	635	610		
1971 059B		5328	USSR	16 JUL	97.3	81.2	713	564		
1971 060A		5329	US	16 JUL	92.9	74.9	422	418		
1971 063D	APOLLO 15 SUBSATELLITE OVI-21	5377	US	26 JUL	SELENOCENTRIC ORBIT					
1971 067B		5397	US	7 AUG	101.9	87.6	914	790		
1971 067E		5398	US	7 AUG	101.9	87.6	912	790		
1971 067G		5401	US	7 AUG	100.3	87.6	829	721		
1971 067H		5406	US	7 AUG	100.8	87.6	856	743		
1971 067J		5405	US	7 AUG	101.6	87.6	906	760		
1971 067K		5395	US	7 AUG	101.9	87.6	912	791		
1971 067L		5399	US	7 AUG	101.7	87.6	906	782		
1971 067M		5400	US	7 AUG	101.7	87.6	904	779		
1971 067N		5384	US	7 AUG	101.8	87.6	914	780		
1971 067P		5410	US	7 AUG	101.4	87.6	989	770		
1971 069A	COSMOS 434	5407	USSR	12 AUG	165.0	51.5	7081	176		
1971 071A	EOLE 1	5435	FRANCE	16 AUG	100.6	50.1	901	675		
1971 071B		5438	US	16 AUG	100.6	50.1	901	673		
1971 071C		5440	US	16 AUG	100.1	50.7	885	644		
1971 071D		5426	US	16 AUG	101.0	49.5	920	696		
1971 073B		5449	USSR	2 SEP	SELENOCENTRIC ORBIT					

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLIN- ATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1971 LAUNCHES (CONT'D)										
1971 074A	COSMOS 436	5461	USSR	7 SEP	94.5	74.0	504	487		
1971 074B		5462	USSR	7 SEP	94.3	74.0	503	476		
1971 075A	COSMOS 437	5466	USSR	10 SEP	94.7	74.0	518	494		
1971 075B		5467	USSR	10 SEP	94.6	74.0	538	467		
1971 080A	SHINSEI	5485	JAPAN	28 SEP	113.0	32.0	1865	868		
1971 080B		5498	JAPAN	28 SEP	111.8	32.0	1756	865		
1971 082A	LUNA 19	5488	USSR	28 SEP						
1971 082C		5490	USSR	28 SEP						
1971 083B	TETR 4	5492	US	29 SEP	92.4	33.0	433	353		
1971 086A	COSMOS 444	5547	USSR	13 OCT	114.1	74.0	1510	1323		
1971 086B	COSMOS 445	5548	USSR	13 OCT	114.4	74.0	1513	1352		
1971 086C	COSMOS 446	5549	USSR	13 OCT	114.8	74.0	1513	1393		
1971 086D	COSMOS 447	5550	USSR	13 OCT	115.1	74.0	1516	1412		
1971 086E	COSMOS 448	5551	USSR	13 OCT	115.5	74.0	1519	1441		
1971 086F	COSMOS 449	5552	USSR	13 OCT	115.2	74.0	1543	1484		
1971 086G	COSMOS 450	5553	USSR	13 OCT	115.9	74.0	1530	1464		
1971 086H	COSMOS 451	5554	USSR	13 OCT	116.6	74.0	1575	1490		
1971 086J		5555	USSR	13 OCT	117.4	74.0	1626	1504		
1971 087A		5557	US	14 OCT	101.5	99.1	878	792		
1971 087B		5556	US	14 OCT	101.6	99.0	888	792		
1971 089A		5560	US	17 OCT	109.5	92.7	801	769		
1971 091D		5576	US	21 OCT	105.3	103.4	1391	628		
1971 093A	PROSPERO	5580	UK	28 OCT	105.3	82.0	1570	546		
1971 093B		5581	UK	28 OCT	105.4	82.0	1581	546		
1971 093C		5582	UK	28 OCT	104.1	82.1	1380	534		
1971 095A		5587	US	3 NOV	1435.7	2.3	35782	35777		
1971 095B		5588	US	3 NOV	1441.8	2.3	35913	35886		
1971 095C		5589	US	3 NOV						
1971 096A	EXPLORER 45	5598	US	15 NOV	340.7	3.6	32421	229		
1971 096B		5973	US	15 NOV	341.1	3.5	19368	218		
1971 099A	COSMOS 457	5614	USSR	20 NOV	109.4	74.0	1219	1185		
1971 099B		5615	USSR	20 NOV	109.3	74.0	1213	1179		
1971 103A	COSMOS 460	5628	USSR	30 NOV	94.6	73.9	507	498		
1971 103B		5629	USSR	30 NOV	94.6	74.0	520	486		
1971 105A	COSMOS 461	5643	USSR	2 DEC	93.4	69.2	451	439		
1971 105B		5644	USSR	2 DEC	93.5	69.2	461	435		
1971 109A	ARIEL 4	5675	UK	11 DEC	93.8	82.9	498	433		
1971 109B		5676	US	11 DEC	93.4	82.9	471	416		
1971 110A		5678	US	14 DEC	104.9	69.9	995	986		
1971 110B		5679	US	14 DEC	104.1	69.9	983	946		
1971 110C		5680	US	14 DEC	104.9	69.9	995	986		
1971 110D		5681	US	14 DEC	104.9	69.9	995	986		
1971 110E		5682	US	14 DEC	104.9	69.9	995	986		
1971 111A	COSMOS 465	5683	USSR	15 DEC	104.8	74.0	1011	969		
1971 111B		5685	USSR	15 DEC	104.7	74.0	1003	965		
1971 114A	COSMOS 468	5705	USSR	17 DEC	100.7	74.0	809	783		
1971 114B		5707	USSR	17 DEC	100.7	74.0	814	771		
1971 114C		8756	USSR	17 DEC	101.1	74.0	821	809		
1971 114D		8757	USSR	17 DEC	101.0	74.0	815	806		
1971 114E		9704	USSR	17 DEC	101.1	74.0	818	806		
1971 116A	INTELSAT 4 F-3	5709	ITSO	20 DEC	1435.2	0.2	35792	35784		
1971 117A	COSMOS 469	5721	USSR	25 DEC	104.7	64.4	1030	932		
1971 119A	DREGL 1	5729	USSR	27 DEC	114.1	73.9	2431	400		
1971 119B		5730	USSR	27 DEC	113.9	73.9	2414	399		
1971 119C		5962	USSR	27 DEC	93.6	73.9	471	433		
1971 120A	METEOR	5731	USSR	29 DEC	102.6	81.2	928	843		
1971 120B		5732	USSR	29 DEC	102.2	81.2	873	858		
1971 120C		8826	USSR	29 DEC	102.5	81.2	903	858		
1971 120D		8827	USSR	29 DEC	102.3	81.2	875	865		
1971 120E		9800	USSR	29 DEC	102.6	81.2	900	871		

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1972 LAUNCHES										
1972 002D	INTEL SAT 4 F-4	5772	US	20 JAN	93.8	96.5	490	438		
1972 003A		5775	ITSO	23 JAN	1436.1	0.2	35800	35774		
1972 003B		5816	US	23 JAN	654.4	28.4	36571	610		
1972 005B		5815	US	31 JAN	94.3	89.7	681	297		
1972 005C	COSMOS 475	5817	US	31 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1972 007B		5836	USSR	14 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1972 009A		5846	USSR	25 FEB	124.7	74.0	1001	967		
1972 009B		5847	USSR	25 FEB	104.5	74.0	998	952		
1972 010A	COSMOS 476	5851	US	1 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1972 010B		5854	US	1 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1972 011A		5852	USSR	1 MAR	97.0	81.2	629	611		
1972 011B		5853	USSR	1 MAR	97.1	81.2	688	563		
1972 012A	PIONEER 10	5860	US	3 MAR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1972 012B		5861	US	3 MAR	HELIOCENTRIC ORBIT					
1972 014A		5879	ESRO	12 MAR	94.9	97.5	525	506		
1972 014B		5880	US	12 MAR	94.8	97.5	521	505		
1972 017A	COSMOS 479	5894	USSR	22 MAR	94.7	74.0	514	496		
1972 017B		5895	USSR	22 MAR	94.6	74.0	522	481		
1972 018A		5903	US	24 MAR	101.7	98.8	883	801		
1972 018B		5904	US	24 MAR	101.6	98.8	874	800		
1972 019A	COSMOS 480	5905	USSR	25 MAR	109.1	82.9	1202	1175		
1972 019B		5907	USSR	25 MAR	109.0	82.9	1199	1164		
1972 022A		5917	USSR	30 MAR	102.5	81.2	891	866		
1972 022B		5918	USSR	30 MAR	102.6	81.2	929	842		
1972 023A	COSMOS 482	5919	USSR	31 MAR	157.5	52.1	6353	213		
1972 023D		5923	USSR	31 MAR	166.8	52.1	7102	216		
1972 023E		6073	USSR	31 MAR	192.2	52.1	9104	211		
1972 025B		5928	FRANCE	4 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 029A	PROGNOZ	5941	USSR	14 APR	CURRENT ELEMENTS NOT MAINTAINED					
1972 031C	LUNAR MODULE	6005	US	16 APR	SELENOCENTRIC ORBIT					
1972 035A	COSMOS 489	6019	USSR	6 MAY	104.7	74.0	1003	967		
1972 035B		6020	USSR	6 MAY	104.6	74.0	988	967		
1972 041A		6052	ITSO	13 JUN	1436.1	0.0	35788	35784		
1972 041B		6058	US	13 JUN	653.6	26.6	36569	570		
1972 043A	COSMOS 494	6059	USSR	23 JUN	100.7	74.0	804	788		
1972 043B		6061	USSR	23 JUN	100.6	74.0	806	773		
1972 043C		6063	USSR	23 JUN	101.0	74.0	827	800		
1972 043D		6065	USSR	23 JUN	101.2	74.0	837	801		
1972 043E	PROGNOZ 2	6162	USSR	23 JUN	100.6	74.0	810	765		
1972 046A		6068	USSR	29 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1972 049A		6079	USSR	30 JUN	102.8	81.2	905	887		
1972 049B		6080	USSR	30 JUN	102.9	81.2	937	864		
1972 052C	COSMOS 500	6096	US	7 JUL	92.7	96.1	412	411		
1972 053A		6097	USSR	10 JUL	94.7	74.0	524	491		
1972 053B		6098	USSR	10 JUL	94.6	74.0	523	482		
1972 057A		6117	USSR	20 JUL	113.9	74.0	1497	1323		
1972 057B	COSMOS 505	6118	USSR	20 JUL	114.3	74.0	1498	1353		
1972 057C		6119	USSR	20 JUL	114.6	74.0	1498	1383		
1972 057D		6120	USSR	20 JUL	113.9	74.0	1498	1413		
1972 057E		6121	USSR	20 JUL	115.3	74.0	1498	1444		
1972 057F	COSMOS 509	6122	USSR	20 JUL	115.6	74.0	1500	1474		
1972 057G		6123	USSR	20 JUL	116.0	74.0	1511	1497		
1972 057H		6124	USSR	20 JUL	116.4	74.0	1547	1497		
1972 057J		6125	USSR	20 JUL	117.0	74.0	1604	1494		
1972 058A	LANDSAT 1	6126	US	23 JUL	103.2	98.8	918	904	137.860, 2229.500, 2265.500, 2287.500	5* 5* 5* 20*
1972 058B	058HZ		US	23 JUL	SEE NOTE					
1972 061A	EXPLORER 46	6142	US	13 AUG	95.9	37.6	742	481		
1972 061B		6145	US	13 AUG	96.5	37.6	719	469		
1972 061C		6146	US	13 AUG	96.6	37.6	582	415		
1972 062A		6148	USSR	16 AUG	104.3	82.9	972	959		
1972 062B	COSMOS 514	6149	USSR	16 AUG	104.3	82.9	969	956		
1972 062C		6277	USSR	16 AUG	104.1	82.8	961	954		

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1972 LAUNCHES (CONT'D)										
1972 062D		7560	USSR	16 AUG	103.2	82.9	972	855		
1972 064A	DENPA	6152	JAPAN	19 AUG	130.6	30.9	4069	230		
1972 064B		6332	JAPAN	18 AUG	138.0	30.9	4704	232		
1972 065A	COPERNICUS	6153	US	21 AUG	99.6	35.0	744	733	136.260,136.440, 400.550	5* 5*
1972 065P		6155	US	21 AUG	99.5	35.0	778	694		
1972 065C		6156	US	21 AUG	99.4	35.0	737	724		
1972 066A	COSMOS 516	6154	USSR	21 AUG	104.5	64.8	1030	919		
1972 069A	TRIAD 01-1X	6173	US	2 SEP	100.6	90.0	838	740		
1972 069B		6180	US	2 SEP	100.6	90.0	836	741		
1972 069C		6250	US	2 SEP	100.1	89.7	828	709		
1972 072A	COSMOS 520	6192	USSR	19 SEP	715.2	65.8	37020	3207		
1972 072E		6302	USSR	19 SEP	706.7	65.8	36619	3187		
1972 073A	EXPLORER 47	6197	US	23 SEP	17394.6	40.1	242793	189218	136.890,137.920	5*
1972 074A	COSMOS 521	6206	USSR	29 SEP	104.9	65.8	997	989		
1972 074B		6207	USSR	29 SEP	104.8	65.8	995	980		
1972 074C		6210	USSR	29 SEP	104.9	65.8	1000	988		
1972 075A	MOLNIYA 2	6208	USSR	30 SEP	716.1	64.9	40104	168		
1972 075D		6303	USSR	30 SEP	697.8	64.8	39248	116		
1972 076A		6212	US	2 OCT	99.5	98.4	746	728		
1972 076B		6217	US	2 OCT	99.5	98.6	740	720		
1972 076C		6218	US	2 OCT	99.5	98.4	750	729		
1972 076D		6221	US	2 OCT	99.5	98.4	750	727		
1972 076E		6224	US	2 OCT	99.3	98.5	739	713		
1972 079C		6822	US	10 OCT	114.7	95.6	1468	1422		
1972 079D		6823	US	10 OCT	114.8	95.7	1490	1408		
1972 079E		6824	US	10 OCT	114.6	95.4	1448	1436		
1972 081A	MOLNIYA 1	6231	USSR	14 OCT	712.3	64.2	39954	131		
1972 082A	NOAA 2	6235	US	15 OCT	114.9	101.4	1457	1451		
1972 082B	AMSAT-OSCAR 6	6236	US	15 OCT	114.9	101.4	1456	1451		
1972 082C		6237	US	15 OCT	109.3	102.7	1471	920		
1972 085A	METEOR	6256	USSR	26 OCT	102.5	81.2	891	865		
1972 085B		6257	USSR	26 OCT	102.6	81.2	926	840		
1972 087A	COSMOS 528	6262	USSR	1 NOV	114.1	74.0	1470	1367		
1972 087B	COSMOS 529	6264	USSR	1 NOV	114.5	74.0	1470	1403		
1972 087C	COSMOS 530	6265	USSR	1 NOV	113.8	74.0	1470	1334		
1972 087D	COSMOS 531	6266	USSR	1 NOV	114.7	74.0	1471	1422		
1972 087E	COSMOS 532	6267	USSR	1 NOV	113.4	74.0	1469	1301		
1972 087F	COSMOS 533	6268	USSR	1 NOV	113.6	74.0	1470	1318		
1972 087G	COSMOS 534	6269	USSR	1 NOV	113.9	74.0	1470	1350		
1972 087H	COSMOS 535	6270	USSR	1 NOV	114.3	74.0	1470	1385		
1972 087J		6271	USSR	1 NOV	116.6	74.0	1595	1468		
1972 088A	COSMOS 536	6272	USSR	3 NOV	94.9	74.0	535	495		
1972 088B		6273	USSR	3 NOV	94.7	74.0	534	485		
1972 088D		6700	USSR	3 NOV	95.2	74.0	544	516		
1972 089A		6275	US	9 NOV	101.7	98.6	871	810		
1972 089B		6276	US	9 NOV	101.7	98.6	872	813		
1972 090A	ANIK 1	6278	CANADA	10 NOV	1436.1	0.0	35794	35782		
1972 091A	EXPLORER 48	6282	US	15 NOV	94.6	1.9	574	422		
1972 091B		6800	US	15 NOV	94.4	1.9	557	418		
1972 097A	NIMBUS 5	6305	US	11 DEC	107.2	99.8	1105	1092	136.500,1702.500, 2208.500	5* 5*
1972 097B		6306	US	11 DEC	111.8	99.8	1519	1103		
1972 101A		6317	US	20 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1972 101B		6318	US	20 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1972 102A	COSMOS 539	6319	USSR	21 DEC	112.9	74.0	1381	1343		
1972 102B		6320	USSR	21 DEC	112.8	74.0	1375	1338		
1972 104A	COSMOS 540	6323	USSR	25 DEC	100.7	74.0	809	780		
1972 104B		6324	USSR	25 DEC	100.5	74.0	794	773		
1972 104C		6391	USSR	25 DEC	100.8	74.1	809	781		
1972 104D		6392	USSR	25 DEC	100.8	74.0	812	781		
1972 104E		8829	USSR	25 DEC	101.5	74.0	851	813		
1972 106A	COSMOS 542	6328	USSR	28 DEC	96.1	81.2	633	522		
1972 106B		6329	USSR	28 DEC	96.2	81.2	649	508		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLIN- ATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1973 LAUNCHES										
1973 003A	COSMOS 544	6343	USSR	20 JAN	94.8	73.9	527	502		
1973 003B		6344	USSR	20 JAN	94.7	74.0	523	490		
1973 005A	COSMOS 546	6350	USSR	26 JAN	96.5	50.6	611	574		
1973 006B		6361	USSR	26 JAN	96.3	50.6	611	559		
1973 007A	MOLNIYA 1	6356	USSR	3 FEB	147.2	64.5	5564	155		
1973 007E		6368	USSR	3 FEB	673.2	64.7	37922	215		
1973 009A	PROGNOZ 3	6364	USSR	15 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1973 010A	COSMOS 549	6373	USSR	28 FEB	94.9	74.0	523	507		
1973 010B		6374	USSR	28 FEB	94.8	74.0	538	485		
1973 011A		6380	US	6 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1973 015A	METEOR	6392	USSR	20 MAR	102.5	81.2	891	872		
1973 015B		6393	USSR	20 MAR	102.7	81.2	933	843		
1973 018A	MOLNIYA 2	6418	USSR	5 APR	718.0	65.2	39624	744		
1973 018D		6439	USSR	5 APR	699.0	65.3	38687	736		
1973 019A	PIONEER 11	6421	US	6 APR	SOLAR SYSTEM ESCAPE TRAJECTORY					
1973 019B		6425	US	6 APR	HELIOCENTRIC ORBIT					
1973 023A	ANIK 2	6437	CANADA	20 APR	1436.1	0.0	35797	35779		
1973 027A	SKYLAB 1	6633	US	14 MAY	92.7	50.0	417	400		
1973 034A	METEOR	6659	USSR	29 MAY	102.4	81.2	898	850		
1973 034B		6660	USSR	29 MAY	102.6	81.2	921	849		
1973 037A	COSMOS 564	6675	USSR	8 JUN	114.6	74.0	1483	1395		
1973 037B	COSMOS 565	6676	USSR	8 JUN	115.3	74.0	1491	1450		
1973 037C	COSMOS 566	6677	USSR	8 JUN	115.0	74.0	1484	1434		
1973 037D	COSMOS 567	6678	USSR	8 JUN	114.8	74.0	1485	1414		
1973 037E	COSMOS 568	6679	USSR	8 JUN	114.4	74.0	1483	1376		
1973 037F	COSMOS 569	6680	USSR	8 JUN	114.2	74.0	1482	1358		
1973 037G	COSMOS 570	6681	USSR	8 JUN	114.0	74.0	1483	1338		
1973 037H	COSMOS 571	6682	USSR	8 JUN	113.7	74.0	1481	1320		
1973 037J		6683	USSR	8 JUN	116.9	74.0	1603	1482		
1973 039A	EXPLORER 49	6686	US	10 JUN	SELENOCENTRIC ORBIT					
1973 039B		6687	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 039D		6689	US	10 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 039F		6725	US	10 JUN	SELENOCENTRIC ORBIT					
1973 039G		6726	US	10 JUN	SELENOCENTRIC ORBIT					
1973 040A		6691	US	12 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1973 042A	COSMOS 574	6707	USSR	20 JUN	105.0	82.9	1013	985		
1973 042B		6708	USSR	20 JUN	104.9	82.9	1003	984		
1973 045A	MOLNIYA 2	6722	USSR	11 JUL	717.6	64.9	39887	462		
1973 045D		6741	USSR	11 JUL	702.1	65.1	39108	473		
1973 047A	MARS 4	6742	USSR	21 JUL	HELIOCENTRIC ORBIT					
1973 049A	MARS 5	6754	USSR	25 JUL	AREOCENTRIC ORBIT					
1973 052A	MARS 6	6768	USSR	5 AUG	HELIOCENTRIC ORBIT					
1973 053A	MARS 7	6776	USSR	9 AUG	HELIOCENTRIC ORBIT					
1973 053B	CAPSULE	7224	USSR	9 AUG	HELIOCENTRIC ORBIT					
1973 054A		6787	US	17 AUG	101.4	98.6	852	807		
1973 054B		6788	US	17 AUG	101.4	98.6	850	807		
1973 056A		6791	US	21 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1973 056B		6792	US	21 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1973 058A	INTELSAT 4 F-7	6796	ITSO	23 AUG	1436.2	0.1	35796	35781		
1973 058B		6797	US	23 AUG	655.0	27.9	36664	550		
1973 060A	COSMOS 582	6802	USSR	28 AUG	94.9	74.0	525	513		
1973 060B		6803	USSR	28 AUG	94.9	74.0	528	508		
1973 060C		6804	USSR	28 AUG	94.9	74.0	537	499		
1973 061A	MOLNIYA 1	6805	USSR	30 AUG	717.7	65.3	39512	840		
1973 061F		6815	USSR	30 AUG	678.1	65.2	37663	717		
1973 064A	COSMOS 585	6825	USSR	8 SEP	113.5	74.0	1406	1376		
1973 064B		6826	USSR	8 SEP	113.4	74.0	1407	1362		
1973 064C		6827	USSR	8 SEP	101.0	74.1	827	794		
1973 065A	COSMOS 586	6828	USSR	14 SEP	104.8	82.9	1009	966		
1973 065B		6829	USSR	14 SEP	104.7	82.9	1001	964		
1973 069A	COSMOS 588	6845	USSR	2 OCT	115.3	73.9	1495	1449		
1973 069B	COSMOS 589	6846	USSR	2 OCT	114.9	73.9	1490	1416		
1973 069C	COSMOS 590	6847	USSR	2 OCT	115.1	73.9	1489	1435		
1973 069D	COSMOS 591	6848	USSR	2 OCT	114.1	73.9	1487	1348		

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INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHz)	NOTES
1973 LAUNCHES (CONT'D)										
1973 069E	COSMOS 592	6849	USSR	2 OCT	113.9	73.9	1486	1332		
1973 069F	COSMOS 593	6850	USSR	2 OCT	114.3	73.9	1487	1366		
1973 069G	COSMOS 594	6851	USSR	2 OCT	114.5	73.9	1487	1382		
1973 069H	COSMOS 595	6852	USSR	2 OCT	114.7	73.9	1487	1400		
1973 069J		6853	USSR	2 OCT	117.1	74.0	1424	1486		
1973 076A	MOLNIYA 2	6877	USSR	19 OCT	732.6	65.0	40065	1018		
1973 076D		6898	USSR	19 OCT	733.0	65.0	40101	1003		
1973 078A	EXPLORER 50	6893	US	26 OCT	17852.7	32.0	260116	179670	136.900,137.980	5*
1973 078C		6895	US	26 OCT	111.8	28.8	2257	358		
1973 078D		6896	US	26 OCT	CURRENT ELEMENTS NOT MAINTAINED					
1973 080A	COSMOS 604	6907	USSR	29 OCT	97.1	81.2	636	610		
1973 080B		6908	USSR	29 OCT	97.1	81.2	672	574		
1973 081A	NNSS D-20	6909	US	30 OCT	105.5	90.1	1146	896		
1973 081B		6910	US	30 OCT	105.5	90.1	1145	895		
1973 084A	COSMOS 606	6916	USSR	2 NOV	718.2	65.9	37812	2566		
1973 084D		6939	USSR	2 NOV	706.5	65.9	37311	2489		
1973 085A	MARINER 10	6919	US	3 NOV	HELIOCENTRIC ORBIT					
1973 086A	NOAA 3	6920	US	6 NOV	116.1	101.8	1512	1503		
1973 086B	086GK		US	6 NOV	SEE NOTE 21*					21*
1973 088B		6931	US	10 NOV	93.7	96.3	465	454		
1973 088D		6938	US	10 NOV	114.6	96.7	1460	1417		
1973 088E		7559	US	10 NOV	114.7	96.7	1482	1405		
1973 089A	MOLNIYA 1	6932	USSR	14 NOV	717.8	65.0	39355	1001		
1973 089E		6940	USSR	14 NOV	698.5	65.1	38416	986		
1973 093A	COSMOS 610	6950	USSR	27 NOV	95.0	74.0	534	506		
1973 093B		6951	USSR	27 NOV	94.8	74.0	533	490		
1973 097A	MOLNIYA 1	6958	USSR	30 NOV	717.6	63.9	39867	480		
1973 097D		7178	USSR	30 NOV	734.7	63.9	40675	512		
1973 098A	COSMOS 614	6965	USSR	4 DEC	100.6	74.0	806	769		
1973 098B		6966	USSR	4 DEC	100.5	74.0	805	768		
1973 098C		6967	USSR	4 DEC	100.6	74.0	811	773		
1973 100A		6973	US	13 DEC	1435.7	0.7	35785	35772		
1973 100B		6974	US	13 DEC	1436.1	0.8	35788	35784		
1973 100D		6976	US	13 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1973 101A	EXPLORER 51	5977	US	16 DEC	92.1	67.9	384	377	137.230,2289.500	5*
1973 104A	COSMOS 617	6985	USSR	19 DEC	113.9	74.0	1486	1335		
1973 104B	COSMOS 618	6986	USSR	19 DEC	115.2	74.0	1488	1445		
1973 104C	COSMOS 619	6987	USSR	19 DEC	115.0	74.0	1489	1425		
1973 104D	COSMOS 620	6988	USSR	19 DEC	115.4	74.0	1495	1460		
1973 104E	COSMOS 621	6989	USSR	19 DEC	114.8	74.0	1487	1407		
1973 104F	COSMOS 622	6990	USSR	19 DEC	114.7	74.0	1487	1370		
1973 104G	COSMOS 623	6991	USSR	19 DEC	114.5	74.0	1487	1388		
1973 104H	COSMOS 624	6992	USSR	19 DEC	114.2	74.0	1487	1352		
1973 104J		6993	USSR	19 DEC	117.0	74.0	1623	1477		
1973 106A	MOLNIYA 2	7000	USSR	25 DEC	717.6	63.9	39911	437		
1973 106D		7372	USSR	25 DEC	733.5	63.9	40659	469		
1973 107A	OREOL 2	7003	USSR	26 DEC	103.8	73.9	1951	399		
1973 107B		7004	USSR	26 DEC	108.7	73.9	1944	393		
1973 108A	COSMOS 626	7005	USSR	27 DEC	104.0	65.4	993	905		
1973 109A	COSMOS 627	7006	USSR	29 DEC	105.0	82.9	1020	972		
1973 109B		7009	USSR	29 DEC	104.7	82.9	999	967		
1974 LAUNCHES										
1974 001A	COSMOS 628	7094	USSR	17 JAN	104.8	82.9	1016	956		
1974 001B		7095	USSR	17 JAN	104.6	82.9	1008	949		
1974 005A	COSMOS 631	7109	USSR	6 FEB	95.0	74.0	544	501		
1974 005B		7110	USSR	6 FEB	94.9	74.0	524	511		
1974 005C		7111	USSR	6 FEB	93.1	74.1	467	392		
1974 005E		7257	USSR	6 FEB	93.1	74.0	452	412		
1974 008A	TANSEI 2	7122	JAPAN	16 FEB	117.8	31.2	2885	279		
1974 008B		7123	JAPAN	16 FEB	118.3	31.2	2929	277		
1974 011A	METEOR	7209	USSR	5 MAR	102.1	81.2	892	833		
1974 011B		7210	USSR	5 MAR	102.1	81.2	921	806		

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INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1974 LAUNCHES (CONT'D)										
1974 013A	UK-X4	7213	UK	9 MAR	101.1	97.8	922	703		
1974 013B		7228	US	9 MAR	101.1	97.8	914	714		
1974 013C		7215	UK	9 MAR	100.9	97.2	899	712		
1974 013D		7214	UK	9 MAR	101.2	98.4	932	702		
1974 015A		7216	US	16 MAR	101.4	98.9	877	781		
1974 015B		7219	US	16 MAR	101.5	98.9	886	782		
1974 017A	COSMOS 637	7229	USSR	26 MAR	1428.9	2.6	35822	35469		
1974 020B		7244	US	10 APR	101.0	94.5	829	785		
1974 020C		7247	US	10 APR	94.7	93.9	516	494		
1974 022A	WESTAR 1	7250	US	13 APR	1436.1	0.0	35796	35777		
1974 023A	MOLNIYA 1	7260	USSR	20 APR	717.7	64.8	39333	1017		
1974 023E		7264	USSR	20 APR	734.4	65.0	40166	1005		
1974 024A	COSMOS 641	7265	USSR	23 APR	114.6	74.0	1483	1389		
1974 024B	COSMOS 642	7266	USSR	23 APR	113.7	74.0	1482	1321		
1974 024C	COSMOS 643	7267	USSR	23 APR	114.1	74.0	1483	1354		
1974 024D	COSMOS 644	7268	USSR	23 APR	113.9	74.0	1483	1337		
1974 024E	COSMOS 645	7269	USSR	23 APR	114.3	74.0	1483	1371		
1974 024F	COSMOS 646	7270	USSR	23 APR	114.7	74.0	1486	1405		
1974 024G	COSMOS 647	7271	USSR	23 APR	114.9	74.0	1485	1424		
1974 024H	COSMOS 648	7272	USSR	23 APR	115.1	74.0	1491	1439		
1974 024J		7273	USSR	23 APR	116.9	74.0	1611	1477		
1974 025A	METEOR	7274	USSR	24 APR	102.5	81.2	894	863		
1974 025B		7275	USSR	24 APR	102.6	81.2	925	841		
1974 026A	MOLNIYA 2	7276	USSR	26 APR	717.7	63.7	38635	1717		
1974 026E		7373	USSR	26 APR	732.6	63.8	39320	1765		
1974 028A	COSMOS 650	7281	USSR	29 APR	113.4	74.0	1402	1369		
1974 028B		7284	USSR	29 APR	113.2	74.0	1394	1363		
1974 029A	COSMOS 651	7291	USSR	15 MAY	103.4	64.9	950	895		
1974 032A	COSMOS 654	7297	USSR	17 MAY	104.4	64.9	1024	913		
1974 033A	SMS 1	7298	US	17 MAY	1436.2	2.7	35908	35766	136.380, 468.825, 1682.500	5*
1974 034A	INTERCOSMOS 11	7299	USSR	17 MAY	94.4	50.6	497	481		
1974 034B		7302	USSR	17 MAY	94.1	50.6	498	459		
1974 035A	COSMOS 655	7306	USSR	21 MAY	95.1	73.9	540	511		
1974 035B		7307	USSR	21 MAY	95.0	74.0	529	512		
1974 035C		7515	USSR	21 MAY	95.1	73.9	543	511		
1974 035D		7516	USSR	21 MAY	95.5	73.9	562	531		
1974 035E		7517	USSR	21 MAY	95.5	74.0	587	509		
1974 035F		7518	USSR	21 MAY	94.5	74.0	509	484		
1974 035G		7519	USSR	21 MAY	94.4	74.0	508	477		
1974 035H		8778	USSR	21 MAY	93.1	74.0	437	421		
1974 037A	LUNA 22	7315	USSR	29 MAY	SELENOCENTRIC ORBIT					
1974 039A	ATS 6	7318	US	30 MAY	1436.2	0.9	35801	35776	136.230, 137.110	5*
1974 039C		7324	US	30 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1974 040A	EXPLORER 52	7326	US	1 JUN	1077.5	84.0	125473	1946	136.290, 400.650	5*
1974 044A	COSMOS 660	7337	USSR	18 JUN	108.8	82.9	1953	397		
1974 044B		7338	USSR	18 JUN	108.6	82.9	1923	405		
1974 045A	COSMOS 661	7339	USSR	21 JUN	95.0	74.0	539	500		
1974 045B		7340	USSR	21 JUN	94.8	74.0	531	492		
1974 045C		7341	USSR	21 JUN	93.3	73.9	450	431		
1974 048A	COSMOS 663	7349	USSR	27 JUN	104.8	82.9	1006	968		
1974 048B		7350	USSR	27 JUN	104.6	82.9	995	965		
1974 050A	COSMOS 665	7352	USSR	29 JUN	747.8	66.3	38490	1868		
1974 050C		7354	USSR	29 JUN	707.4	66.5	38038	1806		
1974 052A	METEOR	7363	USSR	9 JUL	103.0	81.2	919	891		
1974 052B		7364	USSR	9 JUL	102.6	81.2	919	852		
1974 054A		7369	US	14 JUL	468.7	124.7	13750	13469		
1974 054B		7370	US	14 JUL	224.5	125.2	11492	228		
1974 054C		8599	US	14 JUL	468.6	124.7	14009	13208		
1974 056A	MOLNIYA 2	7376	USSR	23 JUL	717.7	63.3	39020	1332		
1974 056B		7382	USSR	24 JUL	744.9	63.2	39685	1466		
1974 060A	MOLNIYA 1-S	7392	USSR	29 JUL	CURRENT ELEMENTS NOT MAINTAINED					
1974 060D		7399	USSR	29 JUL	221.5	46.8	11350	152		
1974 063A		7411	US	9 AUG	101.6	98.7	876	803		

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INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1974 LAUNCHES (CONT'D)										
1974 063B		7411	US	9 AUG	101.6	98.7	874	801		
1974 066A	COSMOS 673	7417	USSR	16 AUG	97.0	81.2	634	604		
1974 066B		7418	USSR	16 AUG	97.2	81.2	634	576		
1974 066C		8424	USSR	16 AUG	97.0	81.2	634	607		
1974 069A	COSMOS 675	7424	USSR	29 AUG	113.6	74.0	1425	1365		
1974 069B		7426	USSR	29 AUG	113.5	74.0	1424	1355		
1974 071A	COSMOS 676	7433	USSR	11 SEP	100.9	74.0	816	794		
1974 071B		7434	USSR	11 SEP	100.8	74.0	818	783		
1974 072A	COSMOS 677	7435	USSR	19 SEP	114.4	74.0	1468	1398		
1974 072B	COSMOS 678	7436	USSR	19 SEP	115.9	74.0	1533	1468		
1974 072C	COSMOS 679	7437	USSR	19 SEP	115.7	74.0	1512	1468		
1974 072D	COSMOS 680	7438	USSR	19 SEP	115.5	74.0	1493	1468		
1974 072E	COSMOS 681	7439	USSR	19 SEP	115.3	74.0	1473	1467		
1974 072F	COSMOS 682	7440	USSR	19 SEP	115.1	74.0	1468	1454		
1974 072G	COSMOS 683	7441	USSR	19 SEP	114.9	74.0	1469	1435		
1974 072H	COSMOS 684	7442	USSR	19 SEP	114.7	74.0	1469	1417		
1974 072J		7443	USSR	19 SEP	117.7	74.0	1689	1473		
1974 075A	WESTAR 2	7466	US	10 OCT	1435.1	0.0	35794	35782		
1974 075B		7467	US	10 OCT	108.8	27.2	2118	223		
1974 075C		7468	US	10 OCT	600.0	24.4	34099	275		
1974 076A	COSMOS 687	7469	USSR	11 OCT	91.1	73.0	404	256		
1974 077A	ARIEL 5	7471	UK	15 OCT	95.1	2.9	538	497	137.680	5*
1974 077B		7472	US	15 OCT	94.8	2.8	528	490		
1974 079A	COSMOS 689	7476	USSR	18 OCT	105.0	82.9	1022	974		
1974 079B		7477	USSR	18 OCT	104.9	82.9	1018	968		
1974 081A	MOLNIYA 1	7480	USSR	24 OCT	717.7	64.3	39606	744		
1974 081D		7485	USSR	24 OCT	731.9	64.3	40297	754		
1974 083A	METEOR	7490	USSR	28 OCT	102.4	81.1	908	840		
1974 083B		7493	USSR	28 OCT	102.5	81.1	914	844		
1974 085B		7498	US	29 OCT	94.9	96.0	522	514		
1974 089A	NOAA 4	7529	US	15 NOV	114.9	101.5	1460	1448	136.770, 137.140, 137.500, 137.620, 1697.500	5* 5* 5*
1974 089B	AMSAT-OSCAR 7	7530	US	15 NOV	114.8	101.5	1460	1443		
1974 089C	INTASAT	7531	SPAIN	15 NOV	114.9	101.5	1460	1444		
1974 089D	- 089EJ		US	15 NOV	SEE NOTE	22*				22*
1974 092A	MOLNIYA 3	7540	USSR	21 NOV	717.7	64.3	39633	718		
1974 092E		7546	USSR	21 NOV	733.7	64.3	40428	711		
1974 093A	INTELSAT 4 F-8	7544	ITSO	21 NOV	1436.3	0.4	35799	35783		
1974 093B		7545	US	21 NOV	654.4	25.6	36632	547		
1974 094A	SKYNET 2B	7547	UK	23 NOV	1435.9	0.7	35789	35776		
1974 094D		7550	US	23 NOV	121.7	28.2	3204	310		
1974 097A	HELIOS 1	7567	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974 097B		7568	US	10 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1974 097C		7569	US	10 DEC	HELIOCENTRIC ORBIT					
1974 097D		7570	FRG	10 DEC	HELIOCENTRIC ORBIT					
1974 099A	METEOR	7574	USSR	17 DEC	102.3	81.2	896	843		
1974 099B		7575	USSR	17 DEC	102.3	81.2	920	819		
1974 100A	COSMOS 698	7576	USSR	18 DEC	95.1	74.0	537	517		
1974 100B		7577	USSR	18 DEC	95.0	74.0	543	503		
1974 100D		7636	USSR	18 DEC	94.7	74.0	553	459		
1974 100F		7722	USSR	18 DEC	94.6	73.9	541	462		
1974 100G		7723	USSR	18 DEC	95.2	73.9	550	510		
1974 100H		7724	USSR	18 DEC	94.2	73.9	499	471		
1974 101A	SYMPHONIE-A	7578	FR/FRG	19 DEC	1436.0	0.2	35798	35770		
1974 101B		7579	US	19 DEC	93.9	27.0	663	265		
1974 101F		8740	US	19 DEC	92.3	27.0	519	258		
1974 101G		9330	US	19 DEC	682.4	13.0	38191	408		
1974 102A	MOLNIYA 2	7583	USSR	21 DEC	717.8	64.6	39242	1114		
1974 102D		7586	USSR	21 DEC	734.0	64.7	40054	1100		
1974 103B	- 103BC		USSR	24 DEC	SEE NOTE	23*				23*
1974 105A	COSMOS 700	7593	USSR	26 DEC	104.7	82.9	1000	965		
1974 105C		7594	USSR	26 DEC	104.6	82.9	988	967		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLIN- ATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1975 LAUNCHES										
1975 004A	LANDSAT 2	7615	US	22 JAN	103.2	98.9	922	901	137.860, 2229.500	5*
									2265.500	5*
									2287.500	5*
1975 004B	004HF		US	22 JAN	SEE NOTE	24*				24*
1975 007A	COSMOS 706	7625	USSR	30 JAN	717.9	63.1	38641	1718		
1975 007D		7629	USSR	30 JAN	716.7	63.3	38593	1710		
1975 008A	COSMOS 707	7637	USSR	5 FEB	94.9	74.0	542	494		
1975 008B		7638	USSR	5 FEB	94.8	74.0	541	484		
1975 009A	MOLNIYA 2	7641	USSR	6 FEB	717.7	64.3	39700	654		
1975 009D		7653	USSR	6 FEB	733.4	64.3	40466	656		
1975 010A	STARLETTE	7646	FRANCE	6 FEB	104.1	49.8	1107	805		
1975 010B		7647	FRANCE	6 FEB	104.4	49.8	1137	803		
1975 010C		7654	FRANCE	6 FEB	104.0	49.8	1094	805		
1975 010D		7655	FRANCE	6 FEB	104.1	49.8	1101	804		
1975 010E		7659	FRANCE	6 FEB	104.3	49.8	1119	805		
1975 011A	SMS 2	764F	US	6 FEB	1436.2	0.1	35804	35774	176.380, 468.82%	5*
									1682.500	5*
1975 011B		7650	US	6 FEB	118.7	27.6	2966	274		
1975 012A	COSMOS 708	7663	USSR	12 FEB	113.5	69.2	1409	1372		
1975 012B		7665	USSR	12 FEB	113.4	69.2	1396	1370		
1975 014A	SRATS (TAIYO)	7671	JAPAN	24 FEB	114.7	31.5	2639	245		
1975 014B		7674	JAPAN	24 FEB	114.4	31.5	2611	245		
1975 016A	COSMOS 709	7678	USSR	28 FEB	115.4	74.0	1474	1463		
1975 016B	COSMOS 710	7679	USSR	28 FEB	114.9	74.0	1492	1412		
1975 016C	COSMOS 711	7680	USSR	28 FEB	114.7	74.0	1489	1397		
1975 016D	COSMOS 712	7681	USSR	28 FEB	115.2	74.0	1493	1446		
1975 016E	COSMOS 713	7682	USSR	28 FEB	115.7	74.0	1506	1471		
1975 016F	COSMOS 714	7683	USSR	28 FEB	115.9	74.0	1515	1481		
1975 016G	COSMOS 715	7684	USSR	28 FEB	116.1	74.0	1537	1481		
1975 016H	COSMOS 716	7685	USSR	28 FEB	115.1	74.0	1492	1430		
1975 016J		7686	USSR	28 FEB	113.0	74.0	1712	1475		
1975 017A		7687	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 017B		7688	US	10 MAR	CURRENT ELEMENTS NOT MAINTAINED					
1975 022A	INTERCOSMOS 13	7710	USSR	27 MAR	103.0	82.9	1521	285		
1975 022B		7713	USSR	27 MAR	102.5	82.9	1478	279		
1975 023A	METEOR	7714	USSR	1 APR	102.5	81.2	895	865		
1975 023B		7715	USSR	1 APR	102.5	81.2	921	842		
1975 024A	COSMOS 723	7718	USSR	2 APR	103.7	64.7	977	891		
1975 025A	COSMOS 724	7727	USSR	7 APR	103.0	65.5	940	866		
1975 027A	GEOS 3	7734	US	9 APR	101.7	114.9	849	837	136.320, 2247.000	5*
1975 027B		7735	US	9 APR	101.7	114.9	849	833		
1975 028A	COSMOS 726	7736	USSR	11 APR	104.6	82.9	997	960		
1975 028B		7737	USSR	11 APR	104.5	82.9	986	959		
1975 029A	MOLNIYA 3	7738	USSR	14 APR	717.6	64.6	39230	1117		
1975 029D		7741	USSR	14 APR	733.0	64.5	40004	1101		
1975 033A	ARIABAT	7752	INDIA	19 APR	96.4	50.6	609	567		
1975 033B		7753	USSR	19 APR	96.2	50.6	620	540		
1975 033C		805F	USSR	19 APR	94.8	50.6	522	495		
1975 034A	COSMOS 729	7768	USSR	22 APR	104.9	82.9	1010	979		
1975 034B		7769	USSR	22 APR	104.8	82.9	1003	977		
1975 036A	MOLNIYA 1	7780	USSR	29 APR	717.8	63.2	38725	1637		
1975 036B		7800	USSR	29 APR	732.8	63.2	39430	1667		
1975 037A	EXPLORER 53	7788	US	7 MAY	94.4	2.9	491	485	136.680	5*
1975 037B		7789	US	7 MAY	94.3	2.9	487	481		
1975 038A	ANIK 3	7790	CANADA	7 MAY	1436.1	0.0	35793	35783		
1975 038D		7794	US	7 MAY	627.3	24.1	35542	254		
1975 039B	CASTOR	7802	FRANCE	17 MAY	97.3	29.9	995	266	136.250	5*
1975 039G		8035	FRANCE	17 MAY	93.1	29.9	610	247		
1975 042A	INTEL SAT 4 F-1	7815	USSR	22 MAY	1436.1	0.0	35789	35785		
1975 042B		7902	US	22 MAY	655.2	25.6	46681	543		
1975 043A		7816	US	21 MAY	101.9	98.8	894	808		
1975 043B		7817	US	24 MAY	101.8	98.8	889	808		
1975 045A	COSMOS 732	7820	USSR	28 MAY	114.6	74.0	1472	1405		
1975 045B	COSMOS 733	7822	USSR	28 MAY	116.2	74.0	1555	1371		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1975 LAUNCHES (CONT'D)										
1975 045C	COSMOS 734	7823	USSR	28 MAY	115.0	74.0	1473	1445		
1975 045D	COSMOS 735	7824	USSR	28 MAY	115.2	74.0	1475	1463		
1975 045E	COSMOS 736	7825	USSR	28 MAY	115.5	74.0	1488	1471		
1975 045F	COSMOS 737	7826	USSR	28 MAY	115.9	74.0	1530	1472		
1975 045G	COSMOS 738	7827	USSR	28 MAY	115.7	74.0	1510	1471		
1975 045H	COSMOS 739	7828	USSR	28 MAY	114.8	74.0	1474	1424		
1975 045J		7831	USSR	28 MAY	113.0	73.9	1696	1488		
1975 049A	MOLNIYA 1	7703	USSR	5 JUN	717.7	63.2	39551	803		
1975 049B	SRET 2	7910	FRANCE	5 JUN	736.4	62.6	40319	949	137.530	
1975 049F		8548	USSR	5 JUN	730.6	63.1	40131	855		
1975 050A	VENERA 9	7915	USSR	8 JUN	CIRCUM-VENEREAN ORBIT					
1975 051C	SSU 1	7937	US	8 JUN	113.6	95.0	1399	1388		
1975 051D		7938	US	8 JUN	113.2	94.9	1409	1347		
1975 051E		7939	US	8 JUN	113.9	95.1	1429	1389		
1975 052A	NIMBUS 6	7924	US	12 JUN	107.4	99.9	1117	1104	136.500, 401.200, 1702.500, 2253.000	5* 5* 5*
1975 052B		7946	US	12 JUN	107.2	99.9	1105	1096		
1975 054A	VENERA 10	7947	USSR	14 JUN	CIRCUM-VENEREAN ORBIT					
1975 055A		7963	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 055B		7964	US	18 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1975 056A	COSMOS 744	7968	USSR	20 JUN	97.0	81.2	631	597		
1975 055B		7969	USSR	20 JUN	97.2	81.2	668	585		
1975 057A	OSO B	7970	US	21 JUN	95.5	32.9	551	537	136.920, 2212.500	5*
1975 057B		7971	US	21 JUN	95.5	32.9	550	535		
1975 062A	COSMOS 749	8009	USSR	4 JUL	95.0	74.0	560	487		
1975 062B		8010	USSR	4 JUL	95.0	74.0	548	492		
1975 062C		8107	USSR	4 JUL	94.6	74.1	539	465		
1975 063A	MOLNIYA 2	8015	USSR	8 JUL	716.7	63.1	38755	1647		
1975 063D		8018	USSR	8 JUL	732.9	63.1	39502	1598		
1975 064A	METEOR 2	8026	USSR	11 JUL	102.4	81.2	893	855		
1975 064B		8027	USSR	11 JUL	102.5	81.2	921	838		
1975 064C		8039	USSR	11 JUL	102.4	81.2	892	854		
1975 064D		8110	USSR	11 JUL	102.2	81.3	904	832		
1975 069A	COSMOS 752	8043	USSR	24 JUL	94.4	65.8	517	468		
1975 069B		8044	USSR	24 JUL	94.2	65.8	514	452		
1975 072A	COS-B	8062	ESA	9 AUG	2203.2	95.9	91214	8204		
1975 072B		8063	US	9 AUG	138.8	89.2	4681	331		
1975 074A	COSMOS 755	8072	USSR	14 AUG	104.9	82.9	1012	973		
1975 074B		8073	USSR	14 AUG	104.8	82.9	1005	967		
1975 075A	VIKING ORBITER 1	8108	US	20 AUG	AREOCENTRIC ORBIT					
1975 075B		8111	US	20 AUG	HELIOCENTRIC ORBIT					
1975 076A	COSMOS 756	8127	USSR	22 AUG	97.2	81.2	632	621		
1975 076B		8128	USSR	22 AUG	97.3	81.2	678	587		
1975 077A	SYMPHONIE-B	8132	FR/FRG	27 AUG	1436.1	0.1	35795	15779		
1975 077B		8133	US	27 AUG	109.6	25.3	2004	407		
1975 077C		8134	US	27 AUG	678.2	13.3	38014	372		
1975 079A	MOLNIYA 1	8187	USSR	2 SEP	717.6	64.2	39780	566		
1975 079E		8274	USSR	2 SEP	735.9	64.2	40585	663		
1975 081A	MOLNIYA 2	8195	USSR	9 SEP	717.7	63.1	38873	1478		
1975 081D		8418	USSR	9 SEP	733.7	63.2	39624	1516		
1975 082A	KIKU	8197	JAPAN	9 SEP	105.9	46.9	1103	974		
1975 082B		8352	JAPAN	9 SEP	105.9	46.9	1103	974		
1975 083A	VIKING ORBITER 2	8199	US	9 SEP	AREOCENTRIC ORBIT					
1975 083B		8272	US	9 SEP	HELIOCENTRIC ORBIT					
1975 086A	COSMOS 761	8285	USSR	17 SEP	114.3	74.0	1483	1401		
1975 086B	COSMOS 762	8286	USSR	17 SEP	115.1	74.0	1487	1439		
1975 086C	COSMOS 763	8287	USSR	17 SEP	115.8	74.0	1511	1475		
1975 086D	COSMOS 764	8288	USSR	17 SEP	116.0	74.0	1528	1479		
1975 086E	COSMOS 765	8289	USSR	17 SEP	116.3	74.0	1552	1479		
1975 086F	COSMOS 766	8290	USSR	17 SEP	114.9	74.0	1485	1420		
1975 086G	COSMOS 767	8291	USSR	17 SEP	115.3	74.0	1487	1458		
1975 086H	COSMOS 768	8292	USSR	17 SEP	115.5	74.0	1494	1472		
1975 086J		8295	USSR	17 SEP	117.8	74.0	1685	1482		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 087A	METEOR	8293	USSR	18 SEP	102.3	81.2	917	820		
1975 087B		8294	USSR	18 SEP	102.4	81.2	921	830		
1975 089A	COSMOS 770	8325	USSR	24 SEP	109.1	82.9	1210	1168		
1975 089B		8326	USSR	24 SEP	109.0	82.9	1201	1164		
1975 091A	INTELSAT 4A F-1	8330	USSR	26 SEP	1436.2	0.1	35792	35784		
1975 091B		8331	US	26 SEP	556.6	21.9	36768	528		
1975 092A	D2-B	8332	FRANCE	27 SEP	96.7	37.1	706	499		
1975 092B		8333	FRANCE	27 SEP	96.8	37.1	712	499		
1975 092C		8336	FRANCE	27 SEP	96.0	37.1	650	487		
1975 092D		8337	FRANCE	27 SEP	96.2	37.0	652	501		
1975 092E		8340	FRANCE	27 SEP	96.0	37.1	649	484		
1975 092F		8341	FRANCE	27 SEP	96.6	37.1	694	499		
1975 092G		8342	FRANCE	27 SEP	96.6	37.1	682	491		
1975 094A	COSMOS 773	8343	USSR	30 SEP	100.8	74.0	807	790		
1975 094B		8344	USSR	30 SEP	100.7	74.0	812	775		
1975 094C		8346	USSR	30 SEP	100.6	74.0	807	773		
1975 097A	COSMOS 775	8357	USSR	8 OCT	1436.0	1.5	35806	35766		
1975 097D		8414	USSR	8 OCT	629.9	46.8	35560	370		
1975 097E		8415	USSR	8 OCT	632.4	46.9	35617	439		
1975 099A	TIP 2	8361	US	12 OCT	98.8	90.3	827	578		
1975 099B		8364	US	12 OCT	93.2	96.7	532	349		
1975 099C		8409	US	12 OCT	95.2	90.8	665	396		
1975 100A	GOES 1	8366	US	16 OCT	1436.3	0.4	35801	35781	135.350, 442.825,	5*
									1682.500	5*
1975 100C		8368	US	16 OCT	532.0	23.5	30518	226		
1975 102AB		8647	USSR	29 OCT	93.4	65.0	485	404		
1975 102AC		8648	USSR	29 OCT	93.0	64.9	448	405		
1975 102BJ		8731	USSR	29 OCT	89.7	65.0	267	258		
1975 103A	COSMOS 778	8419	USSR	4 NOV	104.6	82.9	1007	973		
1975 103B		8421	USSR	4 NOV	104.7	82.9	1000	969		
1975 105A	MOLNIYA 3	8425	USSR	14 NOV	717.7	63.0	38913	1441		
1975 105D		8462	USSR	14 NOV	733.8	63.1	39674	1469		
1975 107A	EXPLORER 55	8440	US	20 NOV	89.9	19.6	270	269		
1975 109A	COSMOS 781	8444	USSR	21 NOV	95.0	74.0	539	508		
1975 109B		8445	USSR	21 NOV	95.0	74.0	550	489		
1975 109C		8447	USSR	21 NOV	93.1	73.9	443	419		
1975 109D		8448	USSR	21 NOV	92.5	74.0	408	395		
1975 109F		8776	USSR	21 NOV	91.8	74.0	364	363		
1975 109G		8777	USSR	21 NOV	92.6	74.0	416	395		
1975 109J		9994	USSR	21 NOV	93.4	74.0	456	432		
1975 109K		9995	USSR	21 NOV	95.7	74.0	761	353		
1975 109L		10433	USSR	21 NOV	94.8	74.1	529	485		
1975 112A	COSMOS 783	8458	USSR	28 NOV	100.9	74.0	814	795		
1975 112B		8459	USSR	28 NOV	100.8	74.0	812	785		
1975 112C		9572	USSR	28 NOV	100.9	74.0	812	801		
1975 114B		8468	US	4 DEC	96.4	96.2	961	222		
1975 115A	INTERCOSMOS 14	8471	USSR	11 DEC	104.7	73.9	1636	331		
1975 115B		8472	USSR	11 DEC	104.5	74.0	1621	324		
1975 115C		8474	USSR	11 DEC	104.8	73.0	1609	368		
1975 115D		8475	USSR	11 DEC	105.9	73.4	1623	454		
1975 115E		8765	USSR	11 DEC	105.3	72.3	1615	410		
1975 115F		8766	USSR	11 DEC	101.7	72.6	1314	367		
1975 116A	COSMOS 785	8473	USSR	12 DEC	104.2	65.0	1024	893		
1975 117A	RCA-SATCOM-1	8476	US	13 DEC	1436.1	0.0	35795	35779		
1975 117C		8479	US	13 DEC	568.0	27.1	32462	224		
1975 118A		8482	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 118C		8516	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 118D		8517	US	14 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 121A	MOLNIYA 2	8492	USSR	17 DEC	717.6	63.2	39788	559		
1975 121D		8529	USSR	17 DEC	732.3	63.1	40489	580		
1975 122A	PRGNOZ 4	8510	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123A	RADUGA	8513	USSR	22 DEC	CURRENT ELEMENTS NOT MAINTAINED					
1975 123D		8546	USSR	22 DEC	475.2	46.7	27200	286		
1975 123E		8547	USSR	22 DEC	557.2	46.7	32261	381		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1975 LAUNCHES (CONT'D)										
1975 124A	METEOR	8519	USSR	25 DEC	102.3	81.2	902	840		
1975 124B		8520	USSR	25 DEC	102.4	81.2	912	838		
1975 125A	MOLNIYA 3	8521	USSR	27 DEC	717.7	63.2	39782	570		
1975 125F		8600	USSR	27 DEC	731.2	63.1	40425	589		
1976 LAUNCHES										
1976 001A	COSMOS 787	8530	USSR	6 JAN	95.1	74.0	545	512		
1976 001B		8531	USSR	6 JAN	95.1	74.0	547	501		
1976 001C		8549	USSR	6 JAN	92.7	74.0	428	395		
1976 001E		9731	USSR	6 JAN	93.1	73.9	438	422		
1976 001G		9791	USSR	6 JAN	92.5	74.0	410	392		
1976 001H		9792	USSR	6 JAN	92.6	74.0	418	396		
1976 003A	HELIOS 2	8582	FRG	15 JAN						
1976 003B		8583	US	15 JAN						
1976 003C		8584	US	15 JAN						
1976 004A	CTS	8585	CANADA	17 JAN	1436.1	0.6	35837	35736	2277.500	5*
1976 004D		8598	US	17 JAN	552.5	25.4	31713	139		
1976 005A	COSMOS 789	8591	USSR	20 JAN	104.9	82.9	1016	974		
1976 005B		8597	USSR	20 JAN	104.8	82.9	1010	970		
1976 006A	MOLNIYA 1	8601	USSR	22 JAN	717.6	63.2	39105	1243		
1976 006D		8701	USSR	22 JAN	695.4	63.2	38032	1213		
1976 007A	COSMOS 790	8604	USSR	22 JAN	95.1	73.9	553	499		
1976 007B		8605	USSR	22 JAN	94.9	74.0	534	500		
1976 008A	COSMOS 791	8607	USSR	28 JAN	114.7	74.0	1488	1402		
1976 008B	COSMOS 792	8608	USSR	28 JAN	115.1	74.0	1492	1437		
1976 008C	COSMOS 793	8609	USSR	28 JAN	114.9	74.0	1492	1419		
1976 008D	COSMOS 794	8610	USSR	28 JAN	115.3	74.0	1494	1454		
1976 008E	COSMOS 796	8611	USSR	28 JAN	115.6	74.0	1490	1460		
1976 008F	COSMOS 796	8612	USSR	28 JAN	115.8	74.0	1517	1473		
1976 008G	COSMOS 797	8613	USSR	28 JAN	116.0	74.0	1530	1481		
1976 008H	COSMOS 798	8614	USSR	28 JAN	116.3	74.0	1555	1481		
1976 008J		8615	USSR	28 JAN	117.9	74.0	1697	1485		
1976 010A	INTELSAT 4A F-2	8620	ITSO	29 JAN	1436.1	0.0	35789	35785		
1976 010B		8621	US	29 JAN	655.2	21.6	36594	628		
1976 011A	COSMOS 800	8645	USSR	3 FEB	105.0	82.9	1015	983		
1976 011B		8646	USSR	3 FEB	104.9	82.9	1005	981		
1976 012A	COSMOS 801	8658	USSR	5 FEB	91.3	70.9	442	244		
1976 014A	COSMOS 803	8688	USSR	12 FEB	96.3	65.8	618	552		
1976 014B		8689	USSR	12 FEB	95.2	65.8	617	542		
1976 014C		8690	USSR	12 FEB	96.3	65.8	615	550		
1976 017A	MARISAT 1	8697	US	19 FEB	1436.3	1.1	35815	35765		
1976 017C		8702	US	19 FEB	622.6	24.9	35319	234		
1976 019A	UME	8709	JAPAN	29 FEB	105.1	69.6	1013	993		
1976 019B		8710	JAPAN	29 FEB	105.1	69.6	1015	993		
1976 021A	MOLNIYA 1	8741	USSR	11 MAR	717.5	63.6	39766	576		
1976 021D		9411	USSR	11 MAR	731.1	63.6	40446	563		
1976 022A	COSMOS 807	8744	USSR	12 MAR	128.9	82.9	1965	397		
1976 022B		8745	USSR	12 MAR	108.8	82.9	1954	392		
1976 023A	LES 8	8746	US	15 MAR	1435.2	25.3	35814	35765		
1976 023B	LES 9	8747	US	15 MAR	1436.0	25.3	35809	35760		
1976 023C	SOLRAD 11A	8748	US	15 MAR	7320.5	27.4	118958	118061		
1976 023D	SOLRAD 11B	8749	US	15 MAR	7333.3	27.4	119570	117740	136.530	5*
1976 023F		8751	US	15 MAR	1455.4	25.5	36945	35772		
1976 023G		8752	US	15 MAR						
1976 023H		8753	US	15 MAR						
1976 023J		8832	US	15 MAR						
1976 024A	COSMOS 808	8754	USSR	16 MAR	97.0	81.2	634	601		
1976 024B		8755	USSR	16 MAR	97.0	81.2	677	565		
1976 026A	MOLNIYA 1	8762	USSR	19 MAR	717.6	63.5	39972	375		
1976 026D		8792	USSR	19 MAR	695.1	63.5	39021	211		
1976 029A	RCA-SATCOM-II	8774	US	26 MAR	1435.0	0.0	35798	35775		
1976 029C		8793	US	26 MAR	601.5	26.3	34289	164		
1976 031A	COSMOS 812	8794	USSR	6 APR	95.0	74.0	541	598		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 031B		8795	USSR	6 APR	94.9	74.0	540	497		
1976 031C		9836	USSR	6 APR	92.5	74.0	419	386		
1976 031D		9990	USSR	6 APR	93.5	73.9	465	432		
1976 032A	METEOR	8799	USSR	7 APR	102.2	81.2	895	839		
1976 032B		8800	USSR	7 APR	102.3	81.2	920	824		
1976 035A	NATO III-A	8808	NATO	22 APR	1436.0	2.1	35795	35775		
1976 035C		8810	US	22 APR	585.5	26.4	33419	191		
1976 037A	COSMOS R16	8812	USSR	28 APR	94.4	65.8	505	478		
1976 037B		8814	USSR	28 APR	94.3	65.8	504	470		
1976 038A		8818	US	30 APR	107.4	63.4	1152	1069		
1976 038B		8819	US	30 APR	107.3	63.4	1145	1065		
1976 038C	SSU-1	8835	US	30 APR	107.4	63.4	1151	1071		
1976 038D	SSU-2	8836	US	30 APR	107.4	63.4	1151	1071		
1976 038E		8839	US	30 APR	107.6	63.4	1161	1075		
1976 038F		8842	US	30 APR	107.3	63.4	1147	1065		
1976 038G		8843	US	30 APR	107.6	63.4	1160	1076		
1976 038H		8859	US	30 APR	107.1	63.4	1134	1053		
1976 038J	SSU-3	8884	US	30 APR	107.4	63.4	1153	1069		
1976 038K		9796	US	30 APR	107.1	63.4	1131	1057		
1976 038L		9996	US	30 APR	107.1	63.4	1131	1057		
1976 039A	LAGEOS	8820	US	4 MAY	225.4	109.8	5946	5838		
1976 039B		8821	US	4 MAY	152.0	109.6	5816	300		
1976 039C		8822	US	4 MAY	225.4	109.8	5946	5835		
1976 041A	MOLNIYA 1	8833	USSR	12 MAY	717.6	64.0	39748	601		
1976 041D		8844	USSR	12 MAY	733.4	64.0	40539	585		
1976 042A	COMSTAR 1	8838	US	13 MAY	1436.1	0.1	35794	35779		
1976 042B		8840	US	13 MAY	649.5	21.1	36257	673		
1976 043A	METEOR	8845	USSR	15 MAY	102.2	81.2	891	841		
1976 043B		8846	USSR	15 MAY	102.4	81.2	914	836		
1976 047A	P 76-5	8860	US	22 MAY	105.6	99.6	1059	994		
1976 047B		8861	US	22 MAY	105.6	99.6	1058	995		
1976 047C		8867	US	22 MAY	106.5	99.3	1127	1010		
1976 047D		8868	US	22 MAY	104.9	99.9	1033	953		
1976 049A	COSMOS 822	8865	USSR	28 MAY	93.1	74.0	586	270		
1976 049B		8866	USSR	28 MAY	91.3	74.0	429	251		
1976 050A		8871	US	2 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 050B		8872	US	2 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 051A	COSMOS 823	8873	USSR	2 JUN	104.9	82.9	1011	978		
1976 051B		8874	USSR	2 JUN	104.8	82.9	1002	977		
1976 053A	MARISAT 2	8882	US	10 JUN	1436.2	1.6	35804	35773		
1976 053F		8910	US	10 JUN	614.9	25.8	34897	254		
1976 054A	COSMOS 825	8889	USSR	15 JUN	114.7	74.0	1489	1396		
1976 054B	COSMOS 826	8890	USSR	15 JUN	116.2	74.0	1546	1483		
1976 054C	COSMOS 827	8891	USSR	15 JUN	114.9	74.0	1491	1414		
1976 054D	COSMOS 828	8892	USSR	15 JUN	115.1	73.9	1491	1434		
1976 054E	COSMOS 829	8893	USSR	15 JUN	115.3	73.9	1492	1452		
1976 054F	COSMOS 830	8894	USSR	15 JUN	115.5	73.9	1495	1469		
1976 054G	COSMOS 831	8895	USSR	15 JUN	115.8	73.9	1508	1477		
1976 054H	COSMOS 832	8896	USSR	15 JUN	116.0	74.0	1522	1483		
1976 054J		8897	USSR	15 JUN	117.9	74.0	1691	1487		
1976 056A	INTERCOSMOS 15	8903	USSR	19 JUN	94.4	74.0	511	479		
1976 056B		8904	USSR	19 JUN	94.4	74.0	512	471		
1976 059A		8916	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 059C		8918	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 059D		8919	US	26 JUN	CURRENT ELEMENTS NOT MAINTAINED					
1976 061A	COSMOS 836	8923	USSR	29 JUN	100.9	74.0	818	789		
1976 061B		8924	USSR	29 JUN	100.8	74.0	811	786		
1976 062A	COSMOS 837	8927	USSR	1 JUL	98.4	62.7	955	415		
1976 062E		8931	USSR	1 JUL	98.3	62.7	942	417		
1976 063B	- 063AS		USSR	2 JUL	SEE NOTE 25*					25*
1976 065B		9007	US	8 JUL	178.1	97.6	7763	233		
1976 065C		9008	US	8 JUL	97.2	96.3	633	625		
1976 066A	PALAPA 1	9009	INDNSA	8 JUL	1436.2	0.0	35793	35785		
1976 066C		9017	US	8 JUL	630.1	24.6	35662	276		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHz)	NOTES
1976 LAUNCHES (CONT'D)										
1976 067A	COSMOS 839	9011	USSR	8 JUL	116.8	65.8	2100	981		
1976 067B - 067AF			USSR	8 JUL	SEE NOTE	26*				26*
1976 069A	COSMOS 841	9022	USSR	15 JUL	100.7	74.0	807	786		
1976 069B		9023	USSR	15 JUL	100.6	74.0	807	778		
1976 070A	COSMOS 842	9025	USSR	21 JUL	104.9	82.9	1013	969		
1976 070B		9044	USSR	21 JUL	104.7	82.9	1002	968		
1976 073A	COMSTAR 2	9047	US	22 JUL	1436.1	0.0	35790	35783		
1976 073B		9329	US	22 JUL	848.3	21.8	36290	580		
1976 074A	MOLNIYA 1	9049	USSR	23 JUL	717.7	63.0	39584	767		
1976 074E		9269	USSR	23 JUL	698.4	63.0	38646	748		
1976 075A	COSMOS 845	9053	USSR	27 JUL	95.1	74.0	550	503		
1976 075B		9054	USSR	27 JUL	95.0	74.0	546	498		
1976 075C		9058	USSR	27 JUL	93.8	74.0	479	450		
1976 075D		9267	USSR	27 JUL	96.6	73.9	707	488		
1976 075E		9268	USSR	27 JUL	96.9	74.0	723	504		
1976 075F		9665	USSR	27 JUL	99.0	73.9	486	460		
1976 075G		9718	USSR	27 JUL	9.9	74.1	482	458		
1976 075H		9789	USSR	27 JUL	9.9	74.0	496	466		
1976 076A	INTERCOSMOS 16	9055	USSR	27 JUL	94.3	50.5	511	458		
1976 076B		9056	USSR	27 JUL	94.2	50.5	504	457		
1976 077A	NOAA 6	9057	US	29 JUL	116.2	102.0	1519	1505	136.770, 137.140, 137.500, 137.620, 1697.500	5* 5* 5*
1976 077B		9063	US	29 JUL	116.2	102.0	1523	1506		
1976 078A	COSMOS 846	9061	USSR	29 JUL	104.7	82.9	1017	951		
1976 078B		9062	USSR	29 JUL	104.6	82.9	1003	953		
1976 080A		9270	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 080B		9271	US	6 AUG	CURRENT ELEMENTS NOT MAINTAINED					
1976 083A	COSMOS 849	9382	USSR	18 AUG	93.8	70.9	645	258		
1976 083B		9383	USSR	18 AUG	89.7	70.9	312	215		
1976 085A	COSMOS 851	9389	USSR	27 AUG	96.6	81.1	637	565		
1976 085B		9390	USSR	27 AUG	96.7	81.2	662	545		
1976 087A		9374	PRC	30 AUG	103.7	69.1	1674	194		
1976 087B		9395	PRC	30 AUG	97.2	69.1	1077	181		
1976 089A	TIP 3	9403	US	1 SEP	97.8	89.2	864	450		
1976 089B		9404	US	1 SEP	94.7	90.3	676	337		
1976 089C		9409	US	1 SEP	93.1	90.1	548	316		
1976 089D		9410	US	1 SEP	94.6	90.4	673	337		
1976 091A		9415	US	11 SEP	101.5	98.6	847	818		
1976 091B		9416	US	11 SEP	101.5	98.6	846	816		
1976 091C		9420	US	11 SEP	101.5	98.6	847	818		
1976 091D		9474	US	11 SEP	101.4	98.7	845	813		
1976 091E		9483	US	11 SEP	101.5	98.6	852	816		
1976 091F		9484	US	11 SEP	101.5	98.6	853	817		
1976 091G		9518	US	11 SEP	101.5	98.6	847	816		
1976 092A	RADUGA	9416	USSR	11 SEP	1436.2	0.4	35917	35662		
1976 098A	COSMOS 858	9443	USSR	29 SEP	100.8	74.0	813	790		
1976 098B		9444	USSR	29 SEP	100.7	74.0	813	780		
1976 101A	MARISAT 3	9478	US	14 OCT	1436.0	1.8	35801	35769		
1976 101E		9542	US	14 OCT	617.7	26.6	35110	189		
1976 102A	METEOR	9481	USSR	15 OCT	102.4	81.2	891	857		
1976 102B		9482	USSR	15 OCT	102.5	81.2	923	836		
1976 103A	COSMOS 860	9486	USSR	17 OCT	104.3	64.6	1023	904		
1976 104A	COSMOS 861	9494	USSR	21 OCT	104.3	64.8	987	937		
1976 105A	COSMOS 862	9495	USSR	22 OCT	717.6	64.0	39306	1041		
1976 105D		9506	USSR	22 OCT	711.8	63.8	38972	1067		
1976 105E		9888	USSR	22 OCT	721.0	63.4	39167	1350		
1976 105F		9889	USSR	22 OCT	719.1	63.3	39318	1055		
1976 105G		9890	USSR	22 OCT	715.2	64.8	40009	220		
1976 105H		9891	USSR	22 OCT	718.4	63.7	39410	976		
1976 105J		9892	USSR	22 OCT	718.6	63.8	39429	967		
1976 105K		9893	USSR	22 OCT	716.4	63.5	39057	1229		
1976 105L		9894	USSR	22 OCT	715.2	63.1	39440	786		
1976 105M		9895	USSR	22 OCT	719.9	63.1	39671	790		

OBJECTS IN ORBIT

INTERNATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1976 LAUNCHES (CONT'D)										
1976 105N		9896	USSR	22 OCT	724.5	64.2	39347	839		
1976 105P		9902	USSR	22 OCT	729.0	63.5	40254	654		
1976 107A	EKRAN	9503	USSR	26 OCT	1436.1	0.3	36065	35509		
1976 108A	COSMOS 864	9509	USSR	29 OCT	104.8	82.9	1011	965		
1976 108B		9510	USSR	29 OCT	104.7	82.9	1000	964		
1976 111F		9582	USSR	23 NOV	90.8	62.8	334	296		
1976 112A	PROGNOZ 5	9557	USSR	25 NOV	5728.6	66.5	195482	3869		
1976 113A	COSMOS 868	9561	USSR	26 NOV	92.9	64.9	439	398		
1976 115A	COSMOS 870	9573	USSR	2 DEC	95.1	74.0	542	514		
1976 115B		9576	USSR	2 DEC	95.0	74.0	554	492		
1976 115C		9577	USSR	2 DEC	93.3	73.9	449	428		
1976 115D		9991	USSR	2 DEC	94.3	73.9	504	470		
1976 115E		9992	USSR	2 DEC	94.3	73.9	503	472		
1976 115F		9993	USSR	2 DEC	94.3	74.0	504	475		
1976 116A	MOLNIYA 2	9574	USSR	2 DEC	717.8	63.6	39723	633		
1976 116D		9579	USSR	2 DEC	731.9	63.6	40425	624		
1976 118A	COSMOS 871	9588	USSR	7 DEC	114.7	74.0	1465	1420		
1976 118B	COSMOS 872	9589	USSR	7 DEC	114.4	74.0	1465	1401		
1976 118C	COSMOS 873	9590	USSR	7 DEC	115.5	74.0	1497	1465		
1976 118D	COSMOS 874	9591	USSR	7 DEC	115.7	74.0	1517	1466		
1976 118E	COSMOS 875	9592	USSR	7 DEC	114.9	74.0	1464	1439		
1976 118F	COSMOS 876	9593	USSR	7 DEC	116.0	74.0	1542	1464		
1976 118G	COSMOS 877	9594	USSR	7 DEC	115.1	74.0	1464	1457		
1976 118H	COSMOS 878	9595	USSR	7 DEC	115.3	74.0	1477	1465		
1976 118J		9598	USSR	7 DEC	117.6	74.0	1690	1464		
1976 120A	COSMOS 880	9601	USSR	9 DEC	96.4	65.8	620	556		
1976 120B		9604	USSR	9 DEC	96.2	65.8	622	540		
1976 120C		9605	USSR	9 DEC	96.4	65.8	620	555		
1976 122A	COSMOS 883	9610	USSR	15 DEC	104.6	82.9	1012	960		
1976 122B		9613	USSR	15 DEC	104.6	82.9	1005	956		
1976 124A	COSMOS 885	9615	USSR	17 DEC	94.2	65.8	505	464		
1976 124B - 124U			USSR	17 DEC	SEE NOTE	27*				27*
1976 125A		9617	US	19 DEC	92.0	96.9	489	260		
1976 125A	COSMOS 886	9634	USSR	27 DEC	113.8	65.8	2308	497		
1976 126B - 126BJ			USSR	27 DEC	SEE NOTE	28*				28*
1976 127A	MOLNIYA 3	9635	USSR	28 DEC	717.6	63.2	39688	660		
1976 127E		9647	USSR	28 DEC	732.4	63.1	40418	654		
1976 128A	COSMOS 887	9637	USSR	28 DEC	104.7	82.9	1018	952		
1976 128B		9638	USSR	28 DEC	104.6	82.9	1007	951		
1977 LAUNCHES										
1977 002A	METEOR 2	9661	USSR	6 JAN	102.9	81.2	906	889		
1977 002B		9662	USSR	6 JAN	102.9	81.2	941	861		
1977 002C		9663	USSR	6 JAN	102.8	81.2	899	880		
1977 002D		9664	USSR	6 JAN	102.8	81.2	902	889		
1977 004A	COSMOS 890	9737	USSR	20 JAN	105.1	82.9	1019	982		
1977 004B		9738	USSR	20 JAN	104.9	82.9	1007	982		
1977 005A	NATO III-B	9785	NATO	28 JAN	1436.1	2.4	35798	35775		
1977 005B		9786	US	28 JAN	104.2	28.0	1299	617		
1977 005C		9787	US	28 JAN	514.3	26.7	34953	167		
1977 005D		9809	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 005E		9810	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 005F		9811	US	28 JAN	CURRENT ELEMENTS NOT MAINTAINED					
1977 006A	COSMOS 891	9801	USSR	2 FEB	94.4	65.8	518	465		
1977 006B		9802	USSR	2 FEB	94.3	65.8	518	454		
1977 007A		9803	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 007C		9855	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 007D		9856	US	6 FEB	CURRENT ELEMENTS NOT MAINTAINED					
1977 010A	MOLNIYA 2	9829	USSR	11 FEB	717.6	62.9	39627	721		
1977 010E		9850	USSR	11 FEB	731.0	62.0	40276	728		
1977 011A	COSMOS 893	9833	USSR	15 FEB	104.9	73.9	1658	332		
1977 011B		9834	USSR	15 FEB	101.2	73.9	1321	319		
1977 012A	TANSEI 3	9841	JAPAN	19 FEB	134.1	65.7	3812	797		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL- INATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHZ)	NOTES
1977 LAUNCHES (CONT'D)										
1977 012R		9842	JAPAN	19 FEB	95.4	65.4	754	326		
1977 012C		9843	JAPAN	19 FEB	134.2	65.7	3814	796		
1977 012D		9844	JAPAN	19 FEB	95.0	64.9	713	331		
1977 012E		9981	JAPAN	19 FEB	133.9	65.2	3900	785		
1977 012F		9982	JAPAN	19 FEB	133.9	65.9	3803	781		
1977 012G		9983	JAPAN	19 FEB	134.4	65.6	3821	811		
1977 013A	COSMOS 894	9846	USSR	21 FEB	104.9	82.9	1014	971		
1977 013R		9848	USSR	21 FEB	104.8	82.9	1003	973		
1977 014A	KIKU 2	9852	JAPAN	23 FEB	1435.9	0.1	35787	35779		
1977 014B		9859	JAPAN	23 FEB	623.0	23.5	35319	254		
1977 015A	COSMOS 895	9853	USSR	26 FEB	97.1	81.1	633	611		
1977 015R		9854	USSR	26 FEB	97.1	81.1	690	560		
1977 018A	PALAPA 2	9862	INDONESIA	10 MAR	1436.2	0.0	35800	35778		
1977 018B		9864	US	10 MAR	640.3	24.4	36182	279		
1977 018C		9866	US	10 MAR	106.4	28.6	1936	183		
1977 018E		9868	US	10 MAR	116.3	28.6	2828	202		
1977 021A	MOLNIYA 1	9880	USSR	24 MAR	717.6	62.9	39654	693		
1977 021D		9927	USSR	24 MAR	732.8	52.9	40396	697		
1977 022A	COSMOS 899	9883	USSR	24 MAR	95.0	74.0	547	500		
1977 022B		9884	USSR	24 MAR	94.9	74.0	542	494		
1977 022C		9900	USSR	24 MAR	94.2	74.0	508	455		
1977 023A	COSMOS 900	9898	USSR	29 MAR	94.2	82.9	517	453		
1977 023B		9899	USSR	29 MAR	94.1	82.9	513	444		
1977 024A	METEOR	9903	USSR	5 APR	102.4	81.2	899	851		
1977 024B		9904	USSR	5 APR	102.5	81.2	923	840		
1977 024C		9907	USSR	5 APR	104.6	83.4	1008	951		
1977 025A	COSMOS 901	9905	USSR	5 APR	94.4	70.9	725	262		
1977 025B		9906	USSR	5 APR	93.8	70.9	655	273		
1977 027A	COSMOS 903	9911	USSR	11 APR	748.3	62.8	39436	946		
1977 027D		9921	USSR	11 APR	724.0	62.9	39718	943		
1977 029A	ESA-GEOS	9931	ESA	20 APR	718.5	26.5	38315	2076	137.200,2299.500	5*
1977 029C		9933	US	20 APR	224.6	26.0	11471	254		
1977 031A	COSMOS 906	9938	USSR	27 APR	94.3	50.6	511	461		
1977 032A	MOLNIYA 3	9941	USSR	28 APR	717.6	62.9	39696	651		
1977 034A		10000	US	12 MAY	1436.1	2.1	35798	35776		
1977 034B		10001	US	12 MAY	1436.0	2.1	35802	35766		
1977 034C		10002	US	12 MAY	1506.9	2.0	38612	35710		
1977 036A	COSMOS 909	10010	USSR	19 MAY	117.0	65.8	2103	995		
1977 036R		10011	USSR	19 MAY	116.9	65.8	2094	992		
1977 036C		10013	USSR	19 MAY	117.0	65.8	2103	994		
1977 038A		10016	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1977 038B		10017	US	23 MAY	CURRENT ELEMENTS NOT MAINTAINED					
1977 039A	COSMOS 911	10019	USSR	25 MAY	104.8	82.9	1004	970		
1977 039B		10020	USSR	25 MAY	104.6	82.9	996	964		
1977 041A	INTEL SAT 4A E-4	10024	USSR	26 MAY	1436.2	0.1	35795	35781		
1977 041R		10025	US	26 MAY	649.8	21.8	36371	579		
1977 042A	COSMOS 913	10028	USSR	30 MAY	94.4	74.0	517	471		
1977 042B - 042R			USSR	30 MAY	SEE NOTE 29*					29*
1977 044A		10033	US	5 JUN	101.5	99.1	867	801		
1977 044B		10034	US	5 JUN	101.5	99.1	865	802		
1977 044C		10037	US	5 JUN	101.5	99.1	867	801		
1977 044D		10085	US	5 JUN	101.5	99.2	866	802		
1977 047A	COSMOS 917	10050	USSR	16 JUN	717.6	62.8	39604	743		
1977 047D		10089	USSR	16 JUN	722.3	62.9	39339	740		
1977 048A	GOES 2	10061	US	16 JUN	1436.0	0.6	35790	35781	136.380,468.825, 1682.500	5* 5*
1977 048B		10062	US	16 JUN	109.0	28.4	1785	571		
1977 048F		10409	US	16 JUN	655.9	23.8	37073	185		
1977 049A	SIGNE 3	10064	FRANCE	17 JUN	94.3	50.6	515	456	136.050,136.630	
1977 049B		10069	USSR	17 JUN	94.2	50.6	515	449		
1977 051A	COSMOS 919	10070	USSR	18 JUN	94.8	71.0	764	265		
1977 051B		10071	USSR	18 JUN	94.4	70.9	726	260		
1977 053A		10091	US	23 JUN	717.9	63.2	20187	20175		
1977 054A	MOLNIYA 1	10092	USSR	24 JUN	717.6	63.1	39873	477		

OBJECTS IN ORBIT

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCL I- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ. (MHz)	NOTES
1977 LAUNCHES (CONT'D)										
1977 054D		10155	USSR	24 JUN	695.4	63.0	38791	454		
1977 055A	COSMOS 921	10095	USSR	24 JUN	97.9	75.8	698	621		
1977 055B		10096	USSR	24 JUN	97.8	75.8	699	617		
1977 056A		10111	US	27 JUN	88.5	96.9	250	158		
1977 057A	METEOR	10113	USSR	29 JUN	97.2	97.8	656	599		
1977 057B		10114	USSR	29 JUN	97.5	97.8	655	628		
1977 057C		10115	USSR	29 JUN	97.5	97.9	652	631		
1977 059A	COSMOS 923	10120	USSR	1 JUL	101.0	74.0	817	797		
1977 059B		10121	USSR	1 JUL	100.8	74.0	819	784		
1977 060A	COSMOS 924	10129	USSR	4 JUL	95.2	74.0	548	512		
1977 060B		10130	USSR	4 JUL	95.0	74.0	544	503		
1977 060C		10131	USSR	4 JUL	94.6	74.0	531	478		
1977 060D		10132	USSR	4 JUL	93.4	73.9	470	423		
1977 061A	COSMOS 925	10134	USSR	7 JUL	97.0	81.2	633	608		
1977 061B		10135	USSR	7 JUL	97.2	81.2	676	578		
1977 062A	COSMOS 926	10137	USSR	8 JUL	105.0	82.9	1023	974		
1977 062B		10138	USSR	8 JUL	104.9	82.9	1011	975		
1977 064A	COSMOS 928	10141	USSR	13 JUL	104.7	82.9	1012	954		
1977 064B		10142	USSR	13 JUL	104.6	82.9	1003	954		
1977 065A	HIMAWARI	10143	JAPAN	14 JUL	1436.1	1.0	35799	35775	136.890	5*
1977 065B	0650Z		US	14 JUL	SEE NOTE	30*				30*
1977 066A	COSMOS 929	10146	USSR	17 JUL	90.6	51.5	308	301		
1977 067A	COSMOS 930	10149	USSR	19 JUL	94.5	74.0	512	481		
1977 068A	COSMOS 931	10150	USSR	20 JUL	717.6	62.9	39675	681		
1977 068D		10167	USSR	20 JUL	720.6	62.9	39822	673		
1977 070A	COSMOS 933	10157	USSR	22 JUL	92.3	65.8	407	372		
1977 070B		10158	USSR	22 JUL	92.1	65.8	402	360		
1977 071A	RADUGA	10159	USSR	23 JUL	1436.2	0.2	35838	35738		
1977 071B		10274	USSR	23 JUL	645.8	46.8	36529	263		
1977 071E		10277	USSR	23 JUL	645.5	46.9	36466	261		
1977 075A	HEAD 1	10217	US	12 AUG	93.3	22.7	444	424	2247.000, 2253.000	5*
1977 075B		10218	US	12 AUG	90.7	22.7	326	293		
1977 076A	VOYAGER 2	10271	US	20 AUG	SOLAR SYSTEM ESCAPE TRAJECTORY					
1977 076B		10272	US	20 AUG	HELIOCENTRIC ORBIT					
1977 076C		10273	US	20 AUG	HELIOCENTRIC ORBIT					
1977 077A	COSMOS 937	10278	USSR	24 AUG	93.3	65.0	444	428		
1977 077C		10280	USSR	24 AUG	92.8	64.9	578	249		
1977 079A	COSMOS 939	10282	USSR	24 AUG	114.8	74.0	1463	1434		
1977 079B	COSMOS 940	10286	USSR	24 AUG	114.4	74.0	1463	1396		
1977 079C	COSMOS 941	10287	USSR	24 AUG	114.6	74.0	1463	1415		
1977 079D	COSMOS 942	10288	USSR	24 AUG	115.9	74.0	1534	1464		
1977 079E	COSMOS 943	10289	USSR	24 AUG	115.0	74.0	1462	1453		
1977 079F	COSMOS 944	10290	USSR	24 AUG	115.2	74.0	1472	1464		
1977 079G	COSMOS 945	10291	USSR	24 AUG	115.4	74.0	1492	1464		
1977 079H	COSMOS 946	10292	USSR	24 AUG	115.6	74.0	1512	1463		
1977 079J		10293	USSR	24 AUG	117.5	74.0	1680	1464		
1977 080A	SIRIO	10294	ITALY	25 AUG	1436.3	0.3	35799	35780	136.140, 136.620	5*
1977 080B		10295	US	25 AUG	115.4	27.0	2079	870		
1977 080C		10296	US	25 AUG	659.9	23.0	37215	246		
1977 080D		10297	US	25 AUG	93.5	28.0	1173	199		
1977 080E		10298	US	25 AUG	95.3	28.0	861	204		
1977 082A	MOLNIYA 1	10315	USSR	30 AUG	717.7	62.8	39842	508		
1977 082E		10369	USSR	30 AUG	732.1	62.8	40542	516		
1977 084A	VOYAGER 1	10321	US	5 SEP	SOLAR SYSTEM ESCAPE TRAJECTORY					
1977 084B		10322	US	5 SEP	HELIOCENTRIC ORBIT					
1977 084C		10323	US	5 SEP	HELIOCENTRIC ORBIT					
1977 087A	COSMOS 951	10352	USSR	13 SEP	104.9	82.9	1017	967		
1977 087B		10355	USSR	13 SEP	104.8	82.9	1009	965		
1977 088A	COSMOS 952	10356	USSR	16 SEP	104.1	64.9	1001	906		
1977 088B		10399	USSR	16 SEP	88.9	64.9	232	217		
1977 090A	COSMOS 954	10361	USSR	18 SEP	89.6	64.9	264	251		
1977 091A	COSMOS 955	10362	USSR	20 SEP	97.3	81.2	640	631		
1977 091B		10363	USSR	20 SEP	97.4	81.2	690	589		
1977 091C		10364	USSR	20 SEP	97.3	81.2	640	631		

OBJECTS IN ORBIT										
INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	TRANSMITTING FREQ.(MHZ)	NOTES
1977 LAUNCHES (CONT'D)										
1977 092A	EKRAN	10365	USSR	20 SEP	1436.0	0.3	35799	35771		
1977 092E		10408	USSR	20 SEP	626.6	47.2	35509	247		
1977 093A	PRDGN0Z 6	10370	USSR	22 SEP	5697.2	65.8	197591	985		
1977 094A		10374	US	23 SEP	89.3	96.5	358	128		
1977 095A	COSMOS 956	10375	USSR	24 SEP	96.8	75.8	862	354		
1977 095B		10378	USSR	24 SEP	96.8	75.8	861	352		
1977 096A	INTERCOSMOS 17	10376	USSR	24 SEP	94.3	82.9	511	467		
1977 096B		10377	USSR	24 SEP	94.2	82.9	514	456		
1977 096C		10379	USSR	24 SEP	93.7	82.9	493	429		
1977 097A	SALYUT 6	10382	USSR	29 SEP	91.3	51.5	346	336		
1977 097C		10384	USSR	29 SEP	89.0	51.5	251	200		
1977 100B		10404	USSR	11 OCT	89.9	62.7	302	238		
1977 100D		10426	USSR	11 OCT	92.0	62.8	415	335		
1977 100E		10427	USSR	11 OCT	92.2	62.8	417	352		
1977 100F		10428	USSR	11 OCT	92.2	62.8	417	351		
1977 100G		10429	USSR	11 OCT	92.2	62.8	411	354		
1977 101A	COSMOS 959	10419	USSR	21 OCT	94.3	65.8	834	144		
1977 101B		10420	USSR	21 OCT	93.7	65.8	773	143		
1977 101C		10421	USSR	21 OCT	93.8	65.8	782	140		
1977 102A	ISEE 1	10422	US	22 OCT	3456.7	28.8	138418	286	2215.500, 2264.800	5*
1977 102B	ISEE 2	10423	ESA	22 OCT	3474.3	28.8	138902	287	2260.800	5*
1977 102C		10424	US	22 OCT	96.0	28.7	853	278		
1977 102D		10425	US	22 OCT	3552.3	28.8	141204	278		
1977 103A	COSMOS 960	10430	USSR	25 OCT	95.1	74.0	545	501		
1977 103B		10431	USSR	25 OCT	95.0	4.0	542	493		
1977 103C		10432	USSR	25 OCT	94.5	74.0	514	484		
1977 105A	MOLNIYA 3	10455	USSR	28 OCT	735.3	62.8	40792	422		
1977 105B		10456	USSR	28 OCT	90.9	62.8	431	205		
1977 106C		10458	USSR	28 OCT	91.1	62.8	450	208		
1977 105D		10460	USSR	28 OCT	91.3	62.8	467	210		
1977 106A	TRANSAT	10457	US	28 OCT	107.0	89.9	1106	1067		
1977 106B		10462	US	28 OCT	107.0	89.9	1106	1067		
1977 107A	COSMOS 962	10459	USSR	28 OCT	104.9	83.0	1010	967		
1977 107B		10461	USSR	28 OCT	104.8	82.9	999	967		

INITIAL ELEMENTS OF OBJECTS WHICH WERE LAUNCHED/CATALOGED AND DECEASED WITHIN THE REPORTING PERIOD

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	PERIOD MINUTES	INCLI- NATION	APOGEE KM.	PERIGEE KM.	NOTES
1977 042P		10349	USSR	30 MAY	94.3	74.0	505	469	
1977 078E		10324	USSR	24 AUG	88.7	62.9	267	153	
1977 078F		10325	USSR	24 AUG	88.3	62.7	239	141	
1977 083A	COSMOS 948	10319	USSR	2 SEP	87.2	81.4	253	212	
1977 083B		10320	USSR	2 SEP	88.9	81.4	228	213	
1977 083C		10356	USSR	2 SEP	88.7	81.3	214	204	
1977 083D		10357	USSR	2 SEP	88.4	81.3	202	193	
1977 085A	COSMOS 949	10326	USSR	6 SEP	89.5	62.8	328	176	
1977 085B		10327	USSR	6 SEP	89.5	62.8	324	176	
1977 085C		10328	USSR	6 SEP	89.3	62.7	309	167	
1977 086A	COSMOS 950	10351	USSR	13 SEP	89.2	62.8	267	200	
1977 086B		10353	USSR	13 SEP	89.1	62.8	260	197	
1977 086C		10354	USSR	13 SEP	89.1	62.8	263	198	
1977 088C		10400	USSR	16 SEP	89.3	65.0	251	233	
1977 089A	COSMOS 953	10359	USSR	16 SEP	89.6	62.8	332	179	
1977 089B		10360	USSR	16 SEP	89.5	62.8	325	175	
1977 089C		10380	USSR	16 SEP	89.0	62.8	309	168	
1977 089D		10381	USSR	16 SEP	88.9	62.8	292	150	
1977 092B		10366	USSR	20 SEP	88.2	51.5	200	170	
1977 092C		10367	USSR	20 SEP	88.3	51.4	193	187	
1977 092D		10368	USSR	20 SEP	88.7	51.4	276	140	
1977 093B		10371	USSR	22 SEP	91.5	65.1	470	231	
1977 093C		10372	USSR	22 SEP	91.5	65.1	470	231	
1977 093D		10373	USSR	22 SEP	89.4	65.1	291	194	
1977 097B		10383	USSR	29 SEP	88.9	51.6	232	209	
1977 098A	COSMOS 957	10385	USSR	30 SEP	89.8	65.0	359	172	
1977 098B		10386	USSR	30 SEP	89.7	65.0	344	174	
1977 098C		10387	USSR	30 SEP	89.4	65.0	328	162	
1977 098D		10388	USSR	30 SEP	89.4	65.0	323	167	
1977 098E		10406	USSR	30 SEP	93.9	64.8	270	170	
1977 098F		10407	USSR	30 SEP	88.8	65.0	273	158	
1977 099A	SOYUZ 25	10401	USSR	9 OCT	88.8	51.6	240	194	31*
1977 099B		10402	USSR	9 OCT	88.7	51.6	232	192	
1977 100A	COSMOS 958	10403	USSR	11 OCT	90.5	62.8	375	255	
1977 100C		10405	USSR	11 OCT	90.7	62.9	366	254	
1977 104A	COSMOS 961	10434	USSR	26 OCT	90.3	65.8	309	291	
1977 104B		10435	USSR	26 OCT	88.3	65.1	248	130	

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OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1965 007B		588	?	3 FEB	11 SEP 77	
1965 082DB		1764	US	15 OCT	28 SEP 77	
1966 000A		2428	UNKN	UNKN	18 SEP 77	
1968 017E		5743	US	5 MAR	25 OCT 77	
1970 089CC		5456	USSR	23 OCT	3 SEP 77	
1970 091AG		4896	USSR	30 OCT	16 SEP 77	
1970 0984		4722	US	18 NOV	14 SEP 77	
1971 115B		5713	USSR	19 DEC	22 SEP 77	
1971 119E		6190	USSR	27 DEC	25 OCT 77	
1973 082B		6912	USSR	30 OCT	8 OCT 77	
1974 040B		7326	US	3 JUN	11 OCT 77	
1974 060E		7400	USSR	29 JUL	11 DEC 76	
1974 100E		7695	USSR	18 DEC	29 SEP 77	
1974 101E		8739	US	19 DEC	8 SEP 77	
1974 103A	COSMOS 699	7687	USSR	24 DEC	14 OCT 77	
1974 103R		7765	USSR	24 DEC	23 SEP 77	
1974 103AW		8116	USSR	24 DEC	23 SEP 77	
1975 004DP		9288	US	22 JAN	1 OCT 77	
1975 067A	COSMOS 750	8036	USSR	17 JUL	29 SEP 77	
1975 102AL		8656	USSR	29 OCT	30 OCT 77	
1975 109E		8449	USSR	21 NOV	9 OCT 77	
1975 109H		9693	USSR	21 NOV	11 SEP 77	
1976 037F		9397	USSR	28 APR	17 SEP 77	
1976 037L		9432	USSR	28 APR	20 SEP 77	
1976 037N		9475	USSR	28 APR	2 SEP 77	
1976 037P		9476	USSR	28 APR	16 SEP 77	
1976 037Q		9485	USSR	28 APR	28 OCT 77	
1976 037R		9487	USSR	28 APR	7 SEP 77	
1976 037S		9488	USSR	28 APR	27 SEP 77	
1976 037T		9489	USSR	28 APR	24 SEP 77	
1976 037U		9490	USSR	28 APR	15 SEP 77	
1976 037W		9508	USSR	28 APR	17 SEP 77	
1976 037X		9511	USSR	28 APR	12 OCT 77	
1976 037Y		9512	USSR	28 APR	3 SEP 77	
1976 037Z		9513	USSR	28 APR	17 SEP 77	
1976 037AA		9514	USSR	28 APR	17 OCT 77	
1976 063C		10047	USSR	2 JUL	13 SEP 77	
1976 063D		10058	USSR	2 JUL	20 SEP 77	
1976 063I		10079	USSR	2 JUL	3 OCT 77	
1976 063W		10082	USSR	2 JUL	23 SEP 77	
1976 063AB		10100	USSR	2 JUL	29 OCT 77	
1976 063AC		10101	USSR	2 JUL	20 SEP 77	
1976 063AD		10102	USSR	2 JUL	25 OCT 77	
1976 063AJ		10107	USSR	2 JUL	3 SEP 77	
1976 063AL		10109	USSR	2 JUL	22 SEP 77	
1976 124C		9626	USSR	17 DEC	29 OCT 77	
1976 124I		9990	USSR	17 DEC	17 OCT 77	
1977 018D		9867	US	10 MAR	13 OCT 77	
1977 042P		10349	USSR	30 MAY	21 SEP 77	
1977 068B		10151	USSR	20 JUL	22 SEP 77	
1977 074C		10274	USSR	3 AUG	5 SEP 77	
1977 074D		10275	USSR	3 AUG	8 OCT 77	
1977 078A	COSMOS 938	10281	USSR	24 AUG	6 SEP 77	
1977 078C		10284	USSR	24 AUG	11 SEP 77	
1977 078D		10285	USSR	24 AUG	21 SEP 77	
1977 078E		10324	USSR	24 AUG	7 SEP 77	

OBJECTS DECAYED WITHIN THE REPORTING PERIOD

INTER- NATIONAL DESIGNATION	NAME	CATALOG NUMBER	SOURCE	LAUNCH	DECAY	NOTES
1977 078F		10325	USSR	24 AUG	6 SEP 77	
1977 081A	COSMOS 947	10299	USSR	27 AUG	9 SEP 77	
1977 081B		10300	USSR	27 AUG	7 SEP 77	
1977 081C		10301	USSR	27 AUG	7 SEP 77	
1977 082B		10316	USSR	30 AUG	26 SEP 77	
1977 082C		10317	USSR	30 AUG	23 SEP 77	
1977 082D		10318	USSR	30 AUG	23 SEP 77	
1977 083A	COSMOS 948	10319	USSR	2 SEP	15 SEP 77	
1977 083B		10320	USSR	2 SEP	7 SEP 77	
1977 083C		10356	USSR	2 SEP	20 SEP 77	
1977 083D		10357	USSR	2 SEP	15 SEP 77	
1977 085A	COSMOS 949	10326	USSR	6 SEP	6 OCT 77	
1977 085B		10327	USSR	6 SEP	11 SEP 77	
1977 085C		10328	USSR	6 SEP	10 SEP 77	
1977 086A	COSMOS 950	10351	USSR	13 SEP	27 SEP 77	
1977 086B		10353	USSR	13 SEP	18 SEP 77	
1977 086C		10354	USSR	13 SEP	20 SEP 77	
1977 088C		10400	USSR	16 SEP	11 OCT 77	
1977 089A	COSMOS 953	10359	USSR	16 SEP	29 SEP 77	
1977 089B		10360	USSR	16 SEP	21 SEP 77	
1977 089C		10380	USSR	16 SEP	30 SEP 77	
1977 089D		10381	USSR	16 SEP	29 SEP 77	
1977 092B		10366	USSR	20 SEP	21 SEP 77	
1977 092C		10367	USSR	20 SEP	21 SEP 77	
1977 092D		10368	USSR	20 SEP	25 SEP 77	
1977 093B		10371	USSR	22 SEP	29 OCT 77	
1977 093C		10372	USSR	22 SEP	23 OCT 77	
1977 093D		10373	USSR	22 SEP	28 SEP 77	
1977 097B		10383	USSR	29 SEP	5 OCT 77	
1977 098A	COSMOS 957	10385	USSR	30 SEP	13 OCT 77	
1977 098B		10386	USSR	30 SEP	5 OCT 77	
1977 098C		10387	USSR	30 SEP	13 OCT 77	
1977 098D		10388	USSR	30 SEP	13 OCT 77	
1977 098E		10405	USSR	30 SEP	15 OCT 77	
1977 098F		10407	USSR	30 SEP	13 OCT 77	
1977 099A	SOYUZ 25	10401	USSR	9 OCT	1 OCT 77	31*
1977 099B		10402	USSR	9 OCT	11 OCT 77	
1977 100A	COSMOS 958	10403	USSR	11 OCT	24 OCT 77	
1977 100C		10405	USSR	11 OCT	31 OCT 77	
1977 104A	COSMOS 961	10434	USSR	26 OCT	26 OCT 77	
1977 104B		10435	USSR	26 OCT	27 OCT 77	

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FOOTNOTES

- 1* 254 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1961 OMICRON 1 AND 1961 OMICRON 2. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 2* 98 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 014A, 1963 014B, AND 1963 014C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 3* 13 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1963 047A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 4* 146 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 020A, 1965 020B, AND 1965 020C. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 5* TRANSMITTING ON COMMAND ONLY.
- 6* 464 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1965 082A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 7* DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH OR COUNTRY OF ORIGIN.
- 8* 77 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1966 056A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 9* 21 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1967 001A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 10* 81 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 091A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 11* 117 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1968 097A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 12* 37 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 029A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 13* A MANNED SPACECRAFT WHICH SUCCESSFULLY LANDED ON THE MOON AND RETURNED TO SELENOCENTRIC ORBIT.
- 14* 241 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1969 082A, 1969 082B, 1969 082C, 1969 082D, 1969 082E, 1969 082F, 1969 082G, 1969 082H, 1969 082J, AND 1969 082K. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 15* 125 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 025A AND 1970 025B. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 16* 90 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 089A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 17* 38 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1970 091A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 18* DEBRIS DISCOVERED IN ORBIT WHICH HAS NOT BEEN IDENTIFIED WITH ANY LAUNCH.
- 19* 83 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1971 015A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.

FOOTNOTES (CONT)

- 20* 215 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1972 05PA. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 21* 177 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1973 086A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 22* 126 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 089A, 1974 089B, AND 1974 089C. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 23* 50 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1974 103A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 24* 197 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1975 004A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 25* 40 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 063A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 26* 29 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 067A.
- 27* 18 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 124A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 28* 56 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1976 126A. OBJECTS OF THIS SERIES THAT HAVE DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 29* 15 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977 042A. THE OBJECT OF THIS SERIES THAT HAS DECAYED CAN BE FOUND IN THE DECAYED OBJECTS LIST IN THE DECEMBER 31 END-OF-THE-YEAR SUMMARY SATELLITE SITUATION REPORT.
- 30* 119 OBJECTS HAVE BEEN IDENTIFIED AS HAVING BEEN LAUNCHED WITH 1977 065A.
- 31* ANNOUNCED RE-ENTRY AND RECOVERY OF A MANNED SPACE VEHICLE.
- NNA NO CATALOG NUMBER ASSIGNED.

ORIGINAL PAGE IS
OF POOR QUALITY